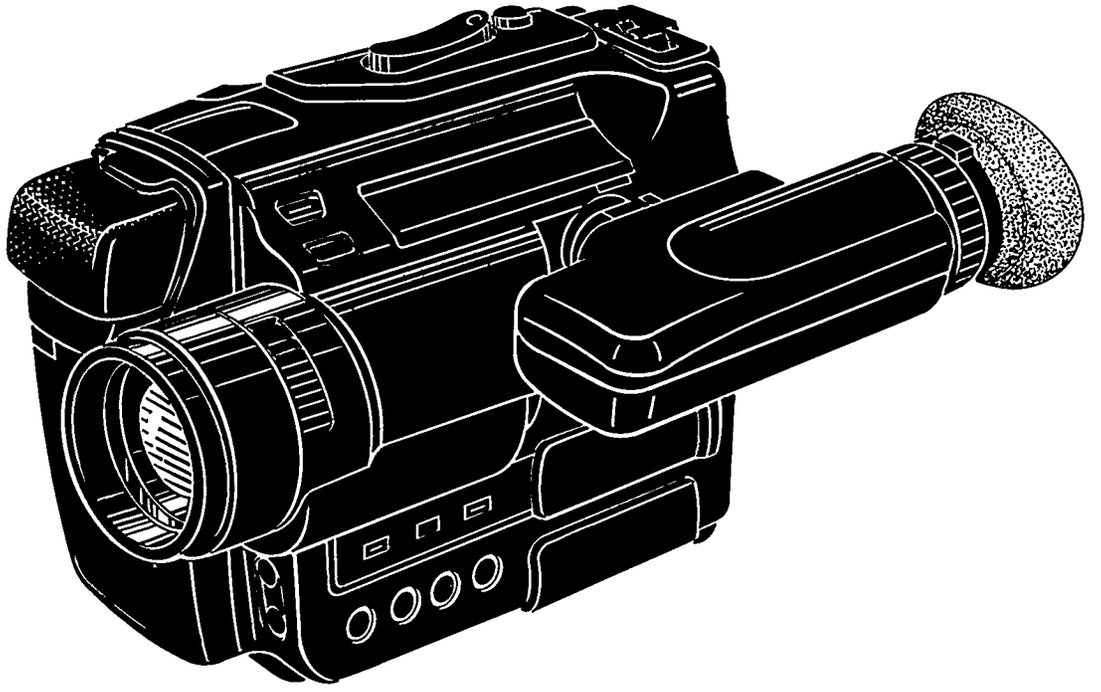
PHILIPS

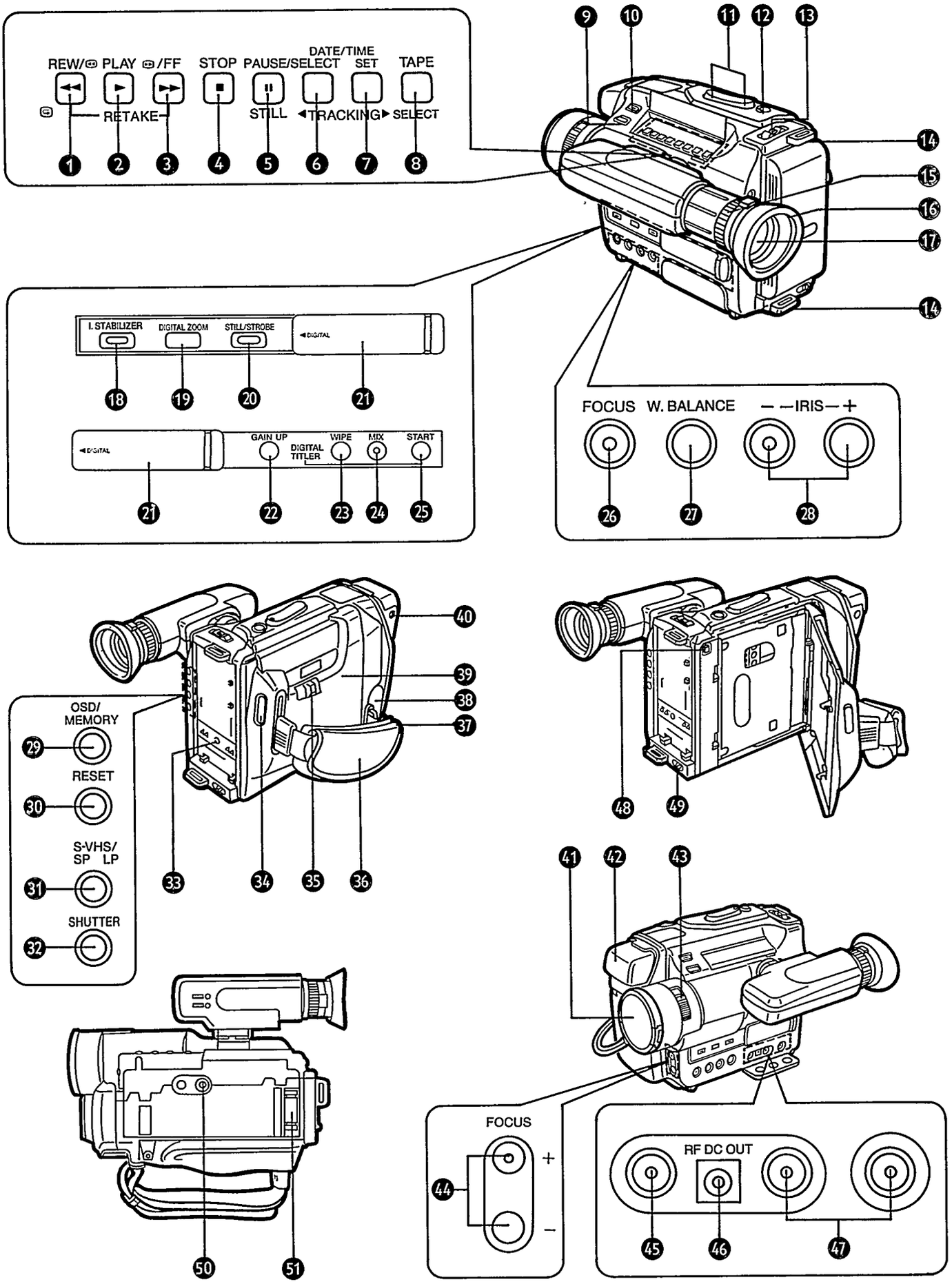
Operating instructions
Bedienungsanleitung
Mode d'emploi
Gebruiksaanwijzing
Istruzioni per l'uso
Instrucciones de manejo
Bruksanvisning

S-VHS C
625



miniEXPLORER
CAMCORDERS

VKR9015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Important

FOR YOUR SAFETY

■ DO NOT REMOVE THE OUTER COVER

To prevent electric shock, do not remove the cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

■ TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

■ WARNING ON BATTERY

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the equipment manufacturer. Discard used batteries according to manufacturer's instructions.

■ WARNING ON LITHIUM BATTERY

The battery used in this device may present a fire or chemical burn hazard if mistreated. Do not recharge, disassemble, heat above 100° C or incinerate. Replace battery with CR2032, use of another battery may present a risk of fire or explosion.

- Dispose of used battery promptly.
- Keep away from children.
- Do not disassemble and do not dispose of in fire.

■ S-VHS-C Camcorder

- The rating plate is on the bottom of the Camcorder.

■ AC adaptor

- The rating plate is on the bottom of the unit.
- This model conforms to the EC directive (for radio interference) 87/308/EEC.

■ IMPORTANT (In the United Kingdom)

The wires in the mains lead are coloured in accordance with the following code:

BLUE = NEUTRAL
BROWN = LIVE

To fit a mains plug:

- Connect the BLUE wire in the mains lead to the NEUTRAL terminal of the plug, marked "N" or coloured black.
- Connect the BROWN wire in the mains lead to the LIVE terminal of the plug, marked "L" or coloured red.
  Do not make any connection to the terminal in the plug which is marked by the letter "E" or by the safety earth symbol ⏚ or coloured green or green and yellow.
  If the mains plug (or adapter) contains a fuse, this should have a value of 3A. If a plug without a fuse is used, the fuse at the distribution board should not be greater than 5A.

We recommend that you should disconnect the AC cord from the outlet.

Copyright laws
Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

Cautions

Please read these cautions before operating the S-VHS-C Camcorder, so that you will obtain the best results from your Camcorder.

Video head clogging
The video heads are the means by which the S-VHS-C Camcorder places picture signals on the tape during recording, and reads picture signals from the tape during playback. If these heads become dirty and clogged from long use, the signals can no longer be recorded correctly, and the playback picture will be distorted accordingly. This is the case, for example, during the playback of a tape, the sound of which is reproduced normally, but no picture is seen, or the picture is greatly distorted. When such symptoms occur, have the S-VHS-C Camcorder checked by qualified service personnel.

If condensation forms inside the S-VHS-C Camcorder
Condensation (dew) forms when warm air comes in contact with a cold object, for example on a window in a heated room in winter. Condensation may form in the S-VHS-C Camcorder and damage the tape and the video heads, if:

- The S-VHS-C Camcorder is in a room where the heater has just been turned on.
- The S-VHS-C Camcorder is in a room with steam or high humidity.
- The S-VHS-C Camcorder is brought from cold surroundings into a well-heated room.
- The S-VHS-C Camcorder is suddenly brought from cool surroundings, such as an air-conditioned room or car, to a place which is hot and humid.
- When condensation has formed inside the S-VHS-C Camcorder, the "DEW" indication in the electronic viewfinder (EVF) will flash and a few seconds later, the unit will turn itself off to protect the tape and the video heads.

After a while, turn the unit on again and make sure that the Dew mark is not displayed any more. Then, wait about 1 hour before operating the S-VHS-C Camcorder again. Depending on the surrounding conditions, it may take several hours before the S-VHS-C Camcorder can be used again.

- As condensation forms gradually, it may take about 10 – 15 minutes before the S-VHS-C Camcorder turns itself off after a change of working environment.
- In an extremely cold place, condensation may freeze and turn into frost. In this case, it may take quite some time for the frost to melt, turn into dew and evaporate.
- When you bring the S-VHS-C Camcorder from a very cold place, e.g. the ski slopes, into a heated room, keep it in a tightly closed plastic bag or similar to prevent condensation from forming inside the S-VHS-C Camcorder.

English

Keep the S-VHS-C Camcorder away from smoke and steam.

Protect the S-VHS-C Camcorder from humidity and dust.

Surrounding conditions
Use the S-VHS-C Camcorder under conditions where the temperatures are between 0° C and 40° C and where the humidity is between 20% and 80%. To avoid deformation of the outer case or other damage, do not leave it exposed to direct sunlight for any length of time, also never leave it in a closed automobile.

Keep the S-VHS-C Camcorder away from heaters.

Keep the S-VHS-C Camcorder away from TV sets
Do not place the S-VHS-C Camcorder near a TV set because it might impair the picture and sound quality of the recorded tape, and/or adversely affect the performance of the S-VHS-C Camcorder.

Keep magnets away
Never bring a magnet or magnetized object such as fluorescent lamps, motors, electric clocks and battery operated toys etc. close to the S-VHS-C Camcorder because this could adversely affect its performance.

Keep the S-VHS-C Camcorder away from areas with strong electric fields
The picture may become distorted, when the S-VHS-C Camcorder is used in places with strong electric fields, such as near TV or radio antennas.

Never put objects inside
Never insert any object other than a video cassette into the S-VHS-C Camcorder. If any object is dropped into it or if any liquid is spilled into it, consult qualified service personnel. Operating it with some foreign matter inside may cause fire or electric shock.

Do not touch the internal parts
Touching the internal parts of the S-VHS-C Camcorder is dangerous and may cause serious damage to the S-VHS-C Camcorder. Do not attempt to disassemble it. For internal inspection, adjustment or repairs, consult qualified service personnel.

Handle with care
Never drop the S-VHS-C Camcorder or expose it to strong physical shocks. Shocks during use may result in abnormal operation and performance.

Appearance of smear distortion
Smear distortion is a peculiar characteristic of the CCD device. It appears as a bright vertical stripe on the screen when the S-VHS-C Camcorder is aimed at spot lights or other bright lights and light reflecting objects. To avoid this problem, make sure not to aim the S-VHS-C Camcorder at such strong light sources during shooting.

Cover the lens with the cap after shooting.

Keep the S-VHS-C Camcorder away from strong light
Do not expose the S-VHS-C Camcorder to strong light, because the heat from it may cause deformation or other damage.

When the S-VHS-C Camcorder is not being used
Remove the video cassette and turn the S-VHS-C Camcorder off with the POWER switch.

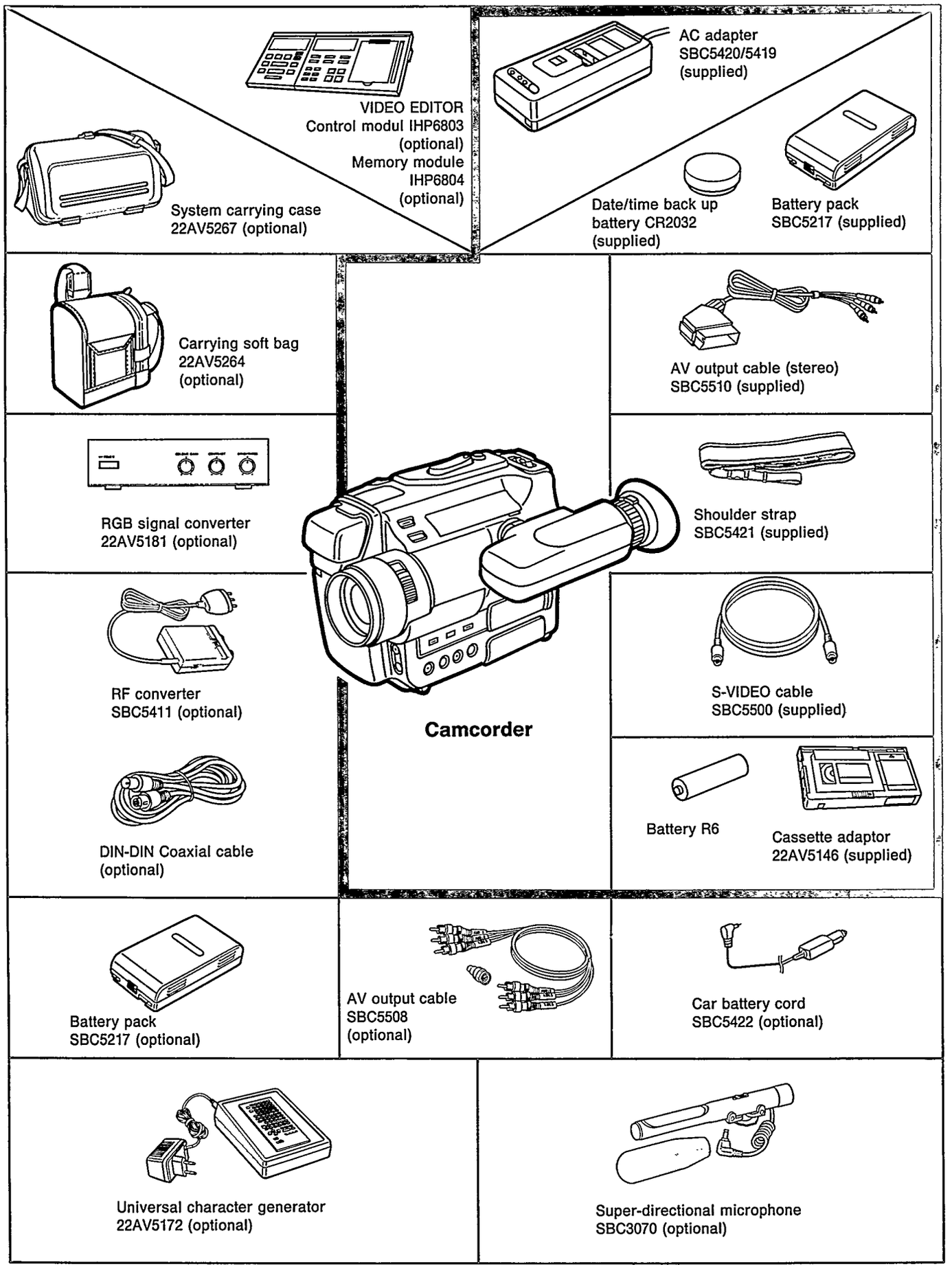
Keep insecticide spray away
Never spray things like insecticide on the lens and body of the S-VHS-C Camcorder. Also, never leave rubber or vinyl objects in contact with any part of it for a long time, because the colour might change and the body surface might be damaged.

Never place the S-VHS-C Camcorder with the cassette compartment side facing down
Never use the S-VHS-C Camcorder with the cassette compartment facing down as this might cause uneven winding and slacking of the tape.

Cleaning the S-VHS-C Camcorder

- The body of the S-VHS-C Camcorder is made of plastic materials. Never use benzine, thinner or other chemicals for cleaning, because the colour might change and the case surface might be damaged.
- Wipe the case and operation panel with a soft, clean cloth. For persistent stains, use a cloth moistened with mild detergent and water, and then wipe with a dry cloth.
- Clean the lens only with a blower brush (used for photo cameras) or a special lens cleaning tissue (used for glasses and cameras).

Camcorder accessories



Controls and connectors

❶ **REW/ ⏪ (REWind/Review) button**
Use this button for the following operations.
1) With the operation switch set to "CAMERA": After recording a scene, use to playback the last few seconds of the recording for quick confirmation that the recording is completed.
2) With the operation switch set to "VCR": To rewind the tape from the Stop mode. Keep it pressed during playback for high speed playback in the reverse direction.

❷ **PLAY button**
To start playback.

❸ **⏩ /FF (Fast Forward/Cue) button**
To wind the tape forward at high speed from the Stop mode.
Keep the button pressed during playback for high speed playback in the forward direction.

❹ **STOP button**
To engage the Stop mode.

❺ **PAUSE/STILL button**
To freeze the picture during playback or to stop playback temporarily.

❻ **◀ TRACKING/DATE/TIME SELECT button**
Use this button for the following operations.
1) To select the time and date function when setting the built-in clock.
2) To obtain optimum picture clarity during playback.

❼ **TRACKING ▶ /DATE/TIME SET button**
Use this button for the following operation.
1) Press it to change the figures during the setting of the time and date.
2) To obtain optimum picture clarity during playback.

❽ **TAPE SELECT button**
To select the length of the cassette tape that is being used for recording or playback.

❾ **FADE button**
To activate fade-in or fade-out of the picture and audio.

❿ **DATE/TIME select button**
To select whether or not to record the time and/or date on the video tape.

⓫ **Zoom control button (W and T)**
To control the telephoto (T) zooming or wide range (W) zooming.

⓬ **SNAPSHOT REC button**
To record a still picture of approx. 5 seconds length. To be able to press this button, the Camcorder must be in the Recording pause mode (the operation switch is set to " CAMERA".)

⓭ **Operation switch**
Set this switch:
To "CAMERA" : For recording.
To "VCR" : For playback.
To turn the Camcorder off, set this switch to the centre "OFF" position.

⓮ **Carrying strap eyelet**
For attaching the carrying strap.

⓯ **Dioptric adjustment ring**
To adjust the viewfinder to your eyesight for better focus.

⓰ **Eyecup**

⓱ **Viewfinder**
To monitor the recording and playback picture. Also shows the operation modes.
To be able to see the screen with maximum magnification, pull on the plastic ring behind the eyecup to extend the viewfinder.

⓲ **I. (Image) STABILIZER button**
Press this button when you are recording on the move, from a vehicle for example.

⓳ **DIGITAL ZOOM button**
To increase the power of the zoom function from the normal 8 times to 16 times (in the maximum telephoto position), the subject will be enlarged 16 times compared with the maximum wide-angle setting.

⓴ **STILL/STROBE button**
Use this button for the following operations:
(At every press of this button, the operation mode changes)
1) For still picture recording
... Press once
2) For strobe picture recording
... Press twice
To return to the normal recording mode, press one more time.

㉑ **Digital mode cover**

㉒ **GAIN UP button**
To increase the Camcorder's sensitivity, when shooting in the dark.

㉓ **DIGITAL WIPE button**
To perform wipe recording of a still picture.

㉔ **DIGITAL MIX button**
To combine a still picture with another picture.

㉕ **DIGITAL START button**
To start the digital wipe or digital mix function.

㉖ **FOCUS mode select button**
To select manual focus adjustment.

㉗ **W. (White) BALANCE set button**
To set the manual white balance.

㉘ **IRIS +/– button**
To control the iris (open/close) manually.

㉙ **OSD (On Screen Display)/MEMORY button**
To cancel the indications in the viewfinder. (Some indications such as "DEW" cannot be canceled.)
Also to activate the tape counter memory function so that the tape position corresponding to the tape counter indication "M0:00.00" can be found easily during fast-forwarding or rewinding of the tape.

㉚ **RESET button**
To reset the tape counter to "0:00.00".

㉛ **S-VHS/SP/LP select button**
To select the recording system (S-VHS or VHS) and tape speed (SP or LP).

㉜ **SHUTTER speed select button**
To select the electronic high speed shutter manually.

㉝ **DC input socket**
To connect the power supply cable from the AC adaptor or car battery.

㉞ **Start/stop button**
To start recording a scene. (It is not necessary to keep this button pressed while recording a scene.)
Press the button again to finish recording a scene and change the Camcorder back to the Recording pause mode.

㉟ **Cassette compartment cover opening knob**
To open the cassette compartment cover.

㊱ **Hand grip strap**
This belt can be adjusted in 4 steps to match the size of your hand.
Adjust it so that the Start/stop button and zoom button can be easily pressed with your fingertips.

㊲ **NEW EDIT socket**
To connect the VIDEO EDITOR control unit IHP6803/6804 (optional).

㊳ **S-VIDEO OUT socket**
To connect to a TV, if the TV set is equipped with a S-VIDEO input socket.

㊴ **Cassette compartment**
Insert a VHS-C or S-VHS-C compact cassette tape for recording or playback.

㊵ **External MIC (Microphone) socket**
For connecting the external microphone. (In this case, the built-in microphone will be cancelled.)

㊶ **Lens cap**
To protect the lens.
Be sure to remove the lens cap before you start recording.

㊷ **Stereo microphone**
To record sound onto the cassette tape.

㊸ **Mode select switch**
FULL AUTO : This setting automatically adjusts the focus, white balance, shutter speed and iris controls.
MANUAL : This setting allows you to adjust the focus, white balance, shutter speed and iris manually.
LOW LIGHT : To record sunsets and other evening scenes.

㊹ **Manual FOCUS +/– button**
To adjust the focus manually after selecting the manual focus mode with the FOCUS button.

㊺ **Video output socket**
Connect this socket, using a video cable, to the video input socket of the TV set (or RF convertor) for playback directly from the Camcorder.

㊻ **RF DC OUT socket**
DC power supply output for RF convertor.

㊼ **Audio output socket**
Connect this socket, using an audio cable, to the audio input socket of the TV set (or RF convertor) for playback directly from the Camcorder.

㊽ **EJECT button**
To insert or eject a video cassette.

㊾ **BATT. (battery) EJECT lever**
To eject the battery.

㊿ **Tripod mount**
To attach the Camcorder to a tripod.

(51) **Back up battery compartment**
To install the lithium battery for the built-in clock and to keep the title memory while the Camcorder is turned off.

Viewfinder display

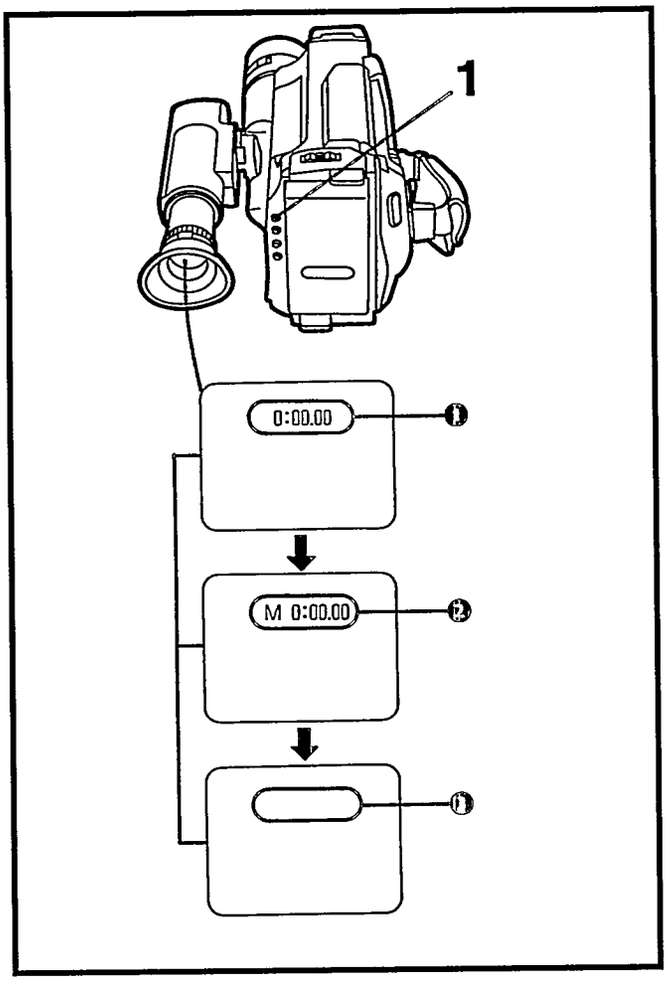
Warning/alarm indications in the viewfinder

The following indications are displayed in the viewfinder to inform you about the conditions of the Camcorder.

Viewfinder	Conditions
DEW	When condensation has formed inside the Camcorder, the "DEW" indication will flash and a few seconds later, the Camcorder will turn itself off. Press the EJECT button, remove the cassette and wait until the DEW indication disappears.
	Video Head Clogging Consult qualified service personnel.
E F	The "–" Indications begin to disappear one after another as the power of the battery pack weakens. When the last bar has disappeared, the battery indication "▭" will flash. Replace with a fully charged battery pack. When a newly charged battery pack is inserted, this indication initially always shows "E– – F", regardless of the battery pack's capacity.
	There is no cassette inside, or the safety tab of the inserted cassette is broken. The indication flashes to warn that recording is not possible. Insert a cassette with the tab intact. If the tab is broken, cover the hole with adhesive tape.
BACKUP	When the back up battery (for the title memory, auto date function, etc.) is not inserted or when it is exhausted, this indication will flash for 10 seconds after the Camcorder has been turned on. Insert a new back up battery (CR2032).
END	During recording, the tape has reached the end. Replace the cassette with a new one. Replace with a new cassette with an intact tab. If the tape is partly recorded, confirm the amount of available recording time using the remaining tape time indication.
INDEX	Appears briefly while an index signal is being recorded.

On-Screen Display

How to turn off the Indications in the viewfinder



1 Press the OSD/MEMORY button twice.

- The indications in the viewfinder ❸ disappear except the warning and alarm indications.

■ **To return to the initial mode**
Press the OSD/MEMORY button again.

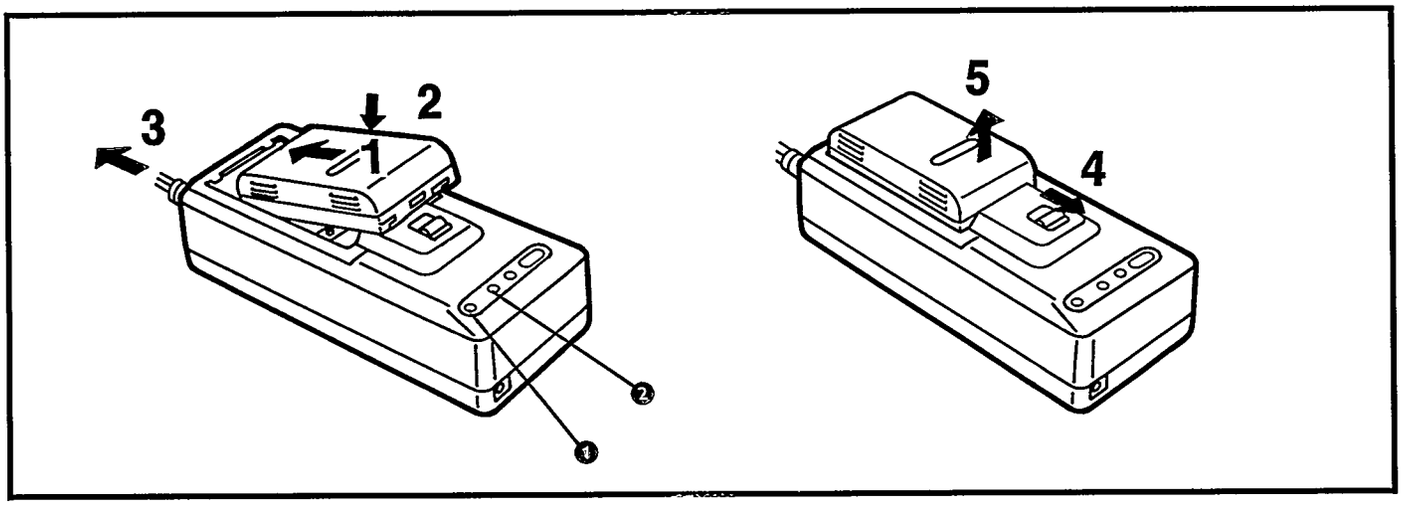
- Each time you press the OSD/MEMORY button, the tape counter indication changes ❶→ ❷→ ❸→ ❶ ...

Power supply systems

Battery pack SBC5217

Charging the battery pack

The battery pack is shipped uncharged and must be charged before it can be used.



1 Insert the upper end of the battery pack into the connector on the AC adaptor as shown in the illustration.

2 Press the rear portion down until it locks with a click.

3 Connect the power cable of the AC adaptor to the mains.

- The power lamp ❶ will light, and several seconds later the charging lamp ❷ will light too.
- When charging is completed, the charging lamp ❷ will go out.

4 After charging is completed, slide the Battery eject lever in the direction of the arrow.

5 Remove the battery pack from the AC adaptor.

Charging time : 60 minutes
Maximum recording time : 45 (50) minutes
( ) is a recording time without the digital function.

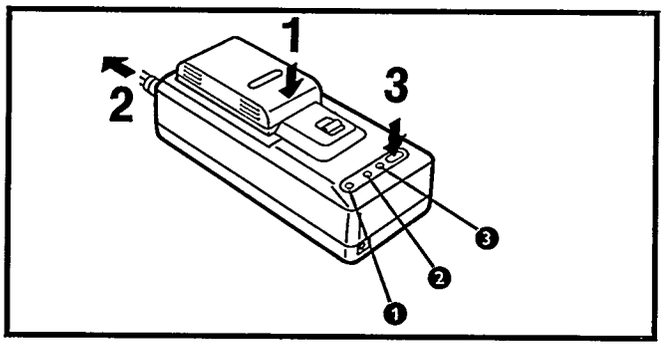
* *Continuous recording with the digital function, using a fully charged battery pack at 25° C. In actual use, depending on the charging condition of the battery pack, the temperature, the actual operation during recording, etc., the recording time may be shorter. So, we recommend that you prepare a spare battery pack.*

Notes:

- *The battery pack is charged after the time indicated above. However the battery pack should continue to be charged for a further 2 hours to achieve maximum operation time.*
- *Charge the battery pack within a temperature range of 10° C — 35° C.*
- *The AC adaptor can be used to supply power to the Camcorder or to charge the battery pack. It cannot be done simultaneously.*

■ **How to use the convenient Discharge → Charge function**

If a battery pack is recharged repeatedly, in a not completely discharged condition, the so-called "memory effect" will occur, and the operation time of the recharged battery pack will gradually become shorter. Therefore, it is recommended to regenerate the battery pack after approximately every fifth recharging by using the convenient Discharge → Charge function.



1 Attach the battery pack to the AC adaptor.

2 Connect the power cable of the AC adaptor to the mains.

- The power lamp ❶ will light, and soon after the charging lamp ❷ will light.

3 Press the Discharge → Charge button for more than 1 second.

- The discharge lamp ❸ will light, and the charge lamp ❷ goes out.

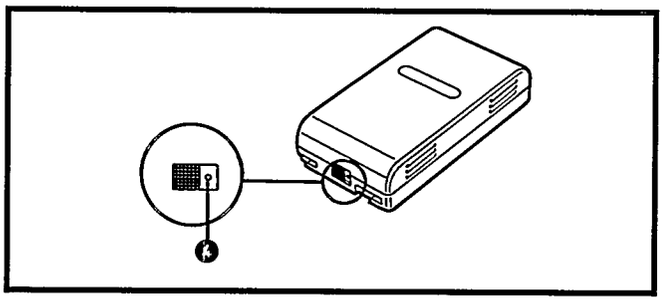
When discharging is finished, the charge lamp ❷ will light instead, and the charging starts.

When charging is completed, the charge lamp ❷ goes out.

Note:

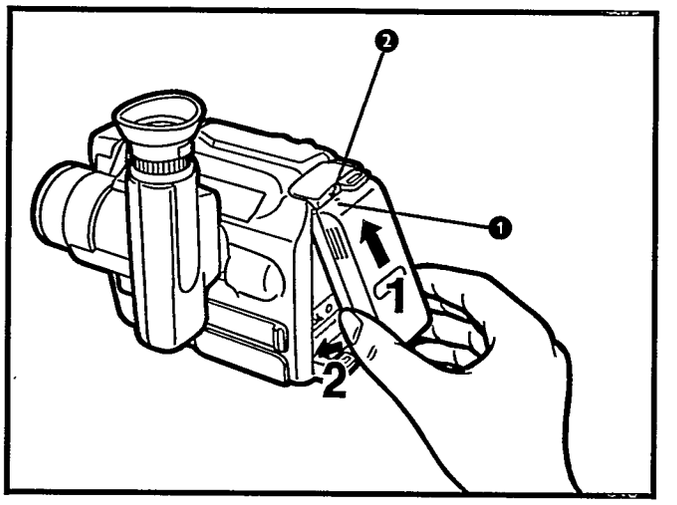
When using the Discharge → Charge function, the charging takes five or six times longer than normal charging.

■ **How to use the charging confirmation marker**



This marker makes it convenient to distinguish between charged and discharged battery packs. Slide the knob so that the dot ❹ is visible to mark a charged battery pack, and slide it so that the dot is not visible for a partially of fully discharged battery pack.

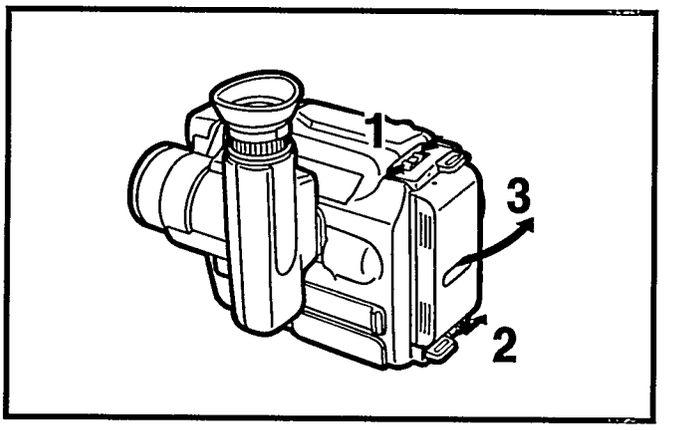
Attaching the battery pack to the Camcorder



1 Align mark ❶ at the top of the battery pack with that on the Camcorder ❷ and insert the battery pack with its upper side first.

2 Push the battery pack until it locks with a click.

■ **How to remove the battery pack**



1 Press and slide the Operation switch to "OFF".

2 After about 10 seconds, slide the BATT. EJECT lever to the right.

3 Remove the battery pack.

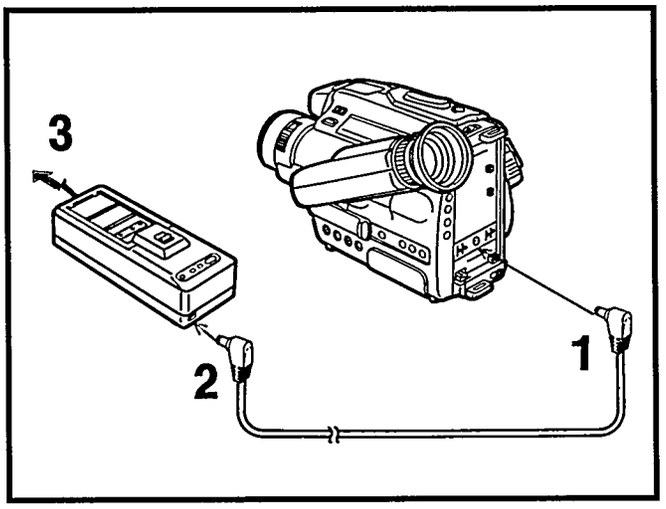
CAUTION:

If the battery pack is removed during recording or playback, the tape remains wound around the video head cylinder and may be damaged.

This is also the case during the loading and unloading of the tape.

AC adaptor SBC5420/5419 (supplied)

How to use the AC adaptor



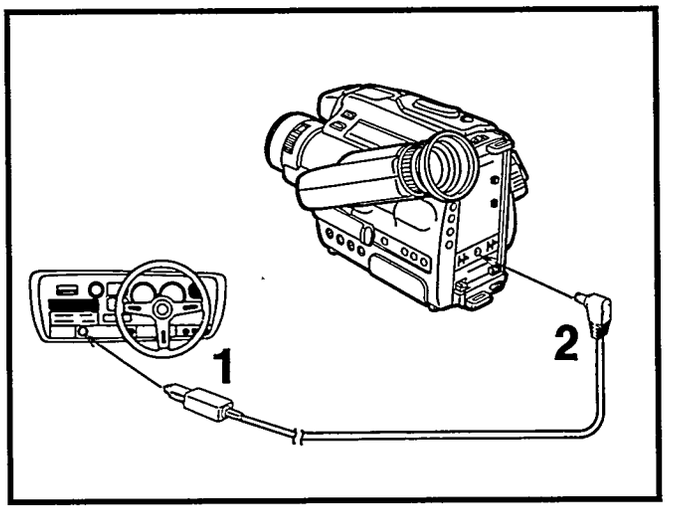
1 Connect the power supply cable to the DC input socket on the Camcorder.

2 Connect the other end of the cable to the DC output socket on the AC adaptor.

3 Connect the power cable of the AC adaptor to the mains.

Car battery cord SBC5422 (optional)

How to use the car battery cord



1 Start the engine and then plug the car battery cord into the cigarette lighter socket.

2 Connect the other end of the cord to the DC input socket on the Camcorder.

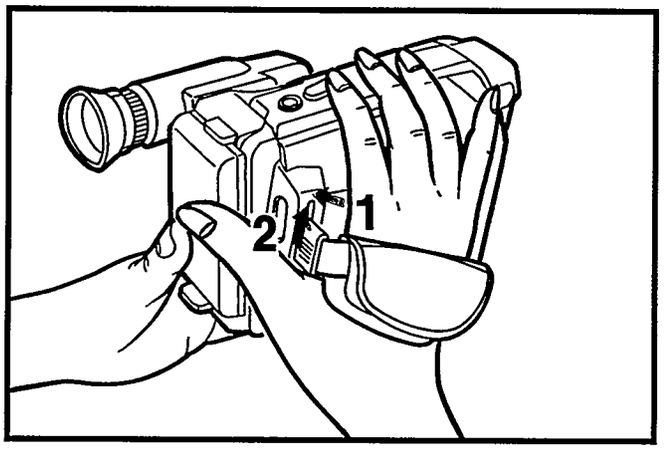
Notes:

- *The car battery cord can only be used with 12 V DC negative-grounded vehicles.*
- *Do not start the car engine while the Camcorder is being powered by the car battery.*

Adjusting the hand grip strap

The angle of the hand grip strap

The angle of the hand grip strap can be adjusted in 4 steps to match the size of your hand. Adjust it so that the Start/stop and Zoom buttons can easily be pressed with your fingertips.

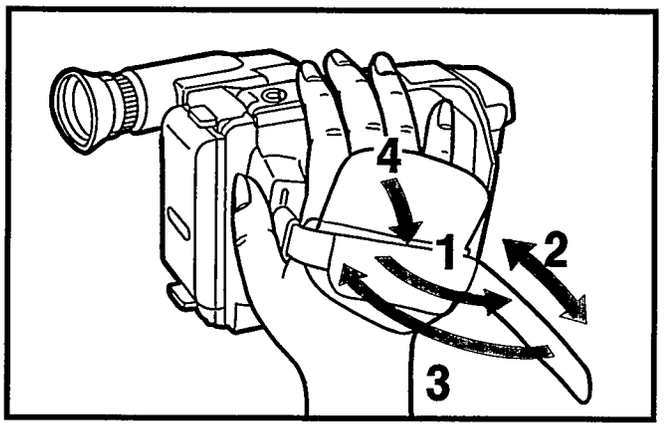


1 Press the hand grip strap holder in the direction of the arrow.

2 Move the hand grip strap holder up or down to the position that is the most comfortable for handling and operating.

The length of the hand grip strap

The length of the hand grip strap should be adjusted so that the grip fits comfortably into the palm of your hand and the Start/stop and Zoom buttons can easily be pressed with your fingertips.



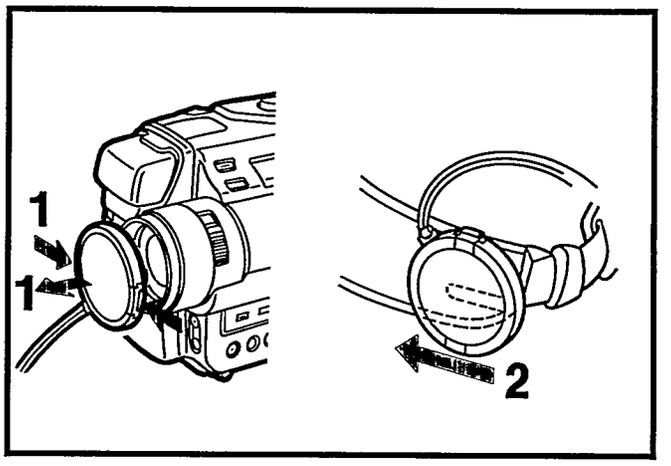
1 Unfasten the velcro strip.

2 Adjust the length to the size of your hand.

3 Fasten the velcro strip.

4 Fold the cover down over the hand grip strap.

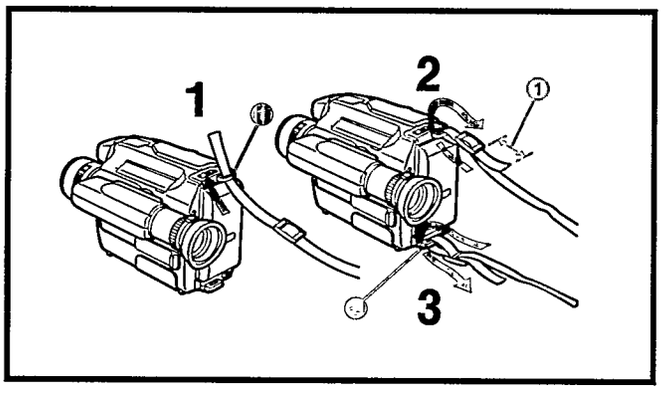
Removing the lens cap



1 Press the stoppers and pull the lens cap off.

2 Hook the lens cap to the hand grip strap to prevent it from getting in front of the lens.

Attaching the carrying strap



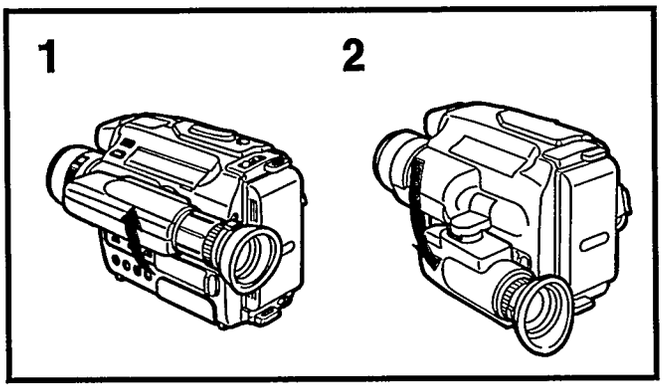
1 Pull the end of the carrying strap through the carrying strap eyelet ❶.

2 Securely attach the end of the carrying strap. (① more than 2 cm)

3 Attach the other side ❷ in the same way.

Viewfinder

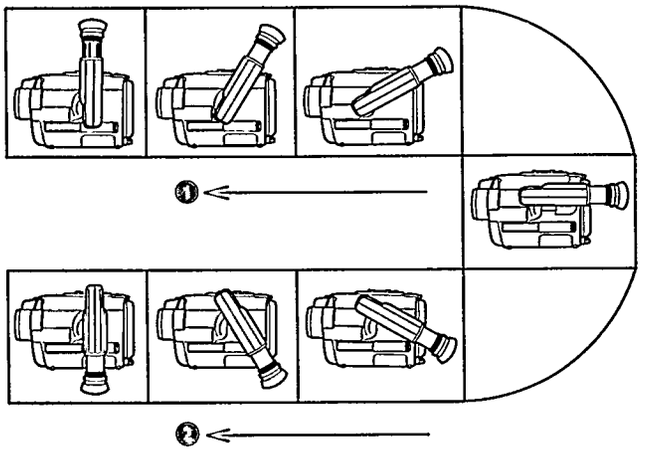
Adjusting the viewfinder angle



1 For normal shooting.

2 For storing the Camcorder in the optional system carrying case or carrying soft bag (both optional).

Tilting range of the viewfinder (the 7 positions are marked be click stops)



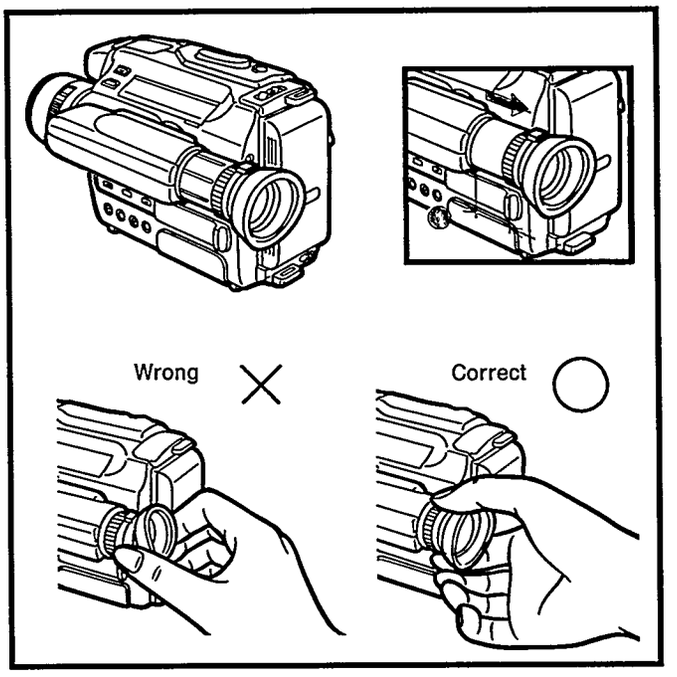
The viewfinder can be turned upwards and downwards in 7 steps from the horizontal position. (There is a click stop for each stop.) When shooting from a low angle or with the Camcorder mounted on a tripod, turn the viewfinder upwards. When holding the Camcorder over your head, turn the Viewfinder downwards.

❶ When shooting from a low angle.

❷ When holding the Camcorder over your head.

Note:
Do not use the viewfinder to hold or carry the Camcorder.

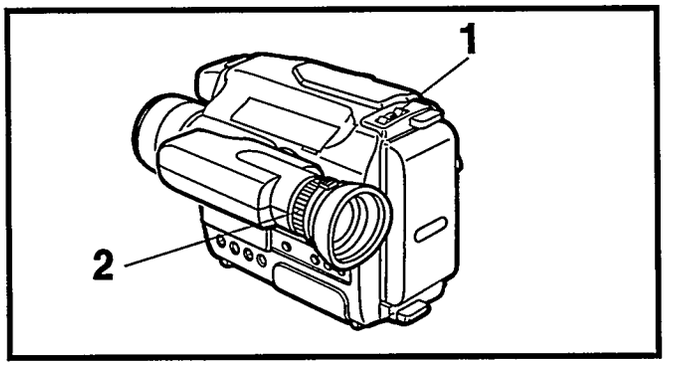
Extending the viewfinder



- When not in use, the viewfinder is stored in its retracted position to make the Camcorder more compact.
- Before shooting, extend the viewfinder to its extended position ❶ (About 3 cm).

Note:
Do not hold it by the eyecup because the eyecup may become detached from the viewfinder.

■ How to adjust the dioptric adjustment ring
With the dioptric adjustment ring, the eyepiece can be adjusted to your own eyesight for clearer viewing.



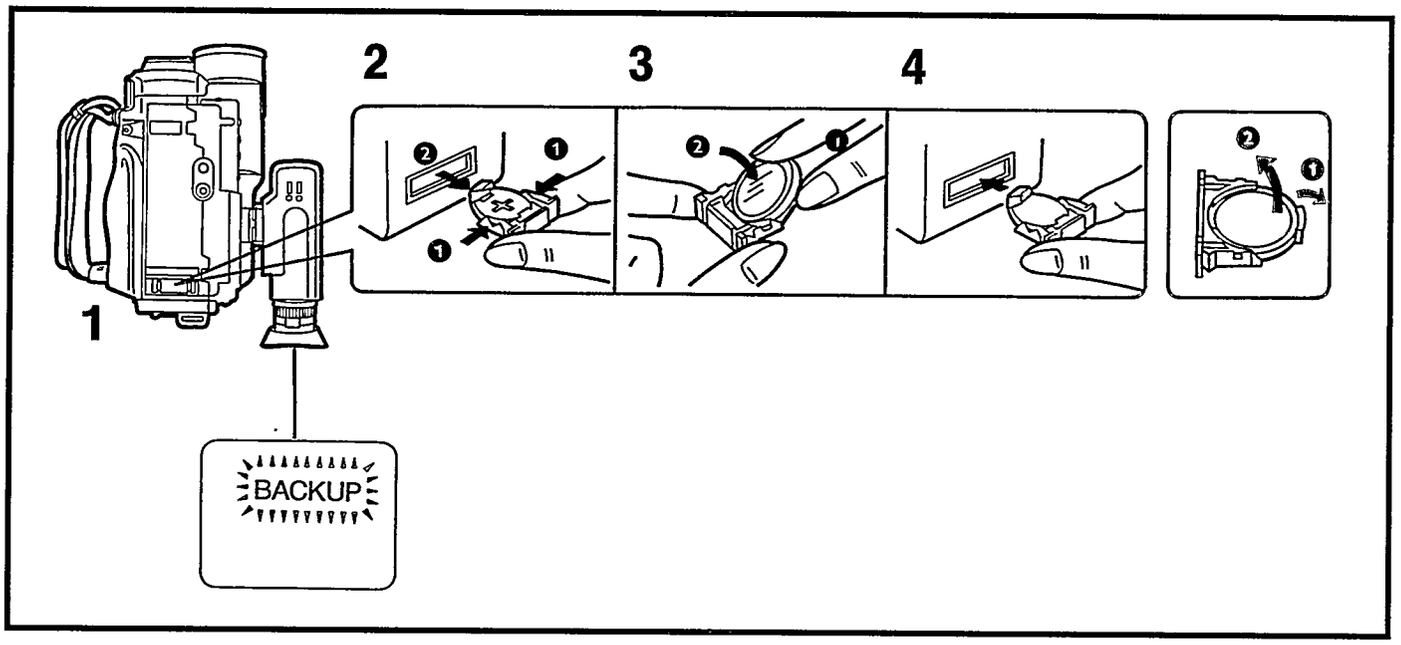
1 Press and slide the Operation switch to "CAMERA".

2 Turn the dioptric adjustment ring until the indications in the viewfinder are clearly focused.

Note:
Do not apply any pressure to the viewfinder except while extending or retracting it.

Setting the date and time

Inserting the back up battery



■ **How to insert the back up battery**

- The "CR2032" back up battery is necessary for storing the date, time and selected tape speed in the memory, when the Camcorder is turned off.

1 Turn the Camcorder upside down.

2 Push the two stoppers ❶ toward each other and pull out the battery holder ❷.

3 Install the battery with the (+) mark facing downward until it locks with a click.

4 Insert the battery holder back into the Camcorder until it locks.

- If the back up battery is not inserted or it is exhausted, the indication "BACKUP" in the viewfinder flashes for approx. 10 seconds when turning the Camcorder on.

■ **When changing the back up battery**

- Use only a "CR2032" back up battery.

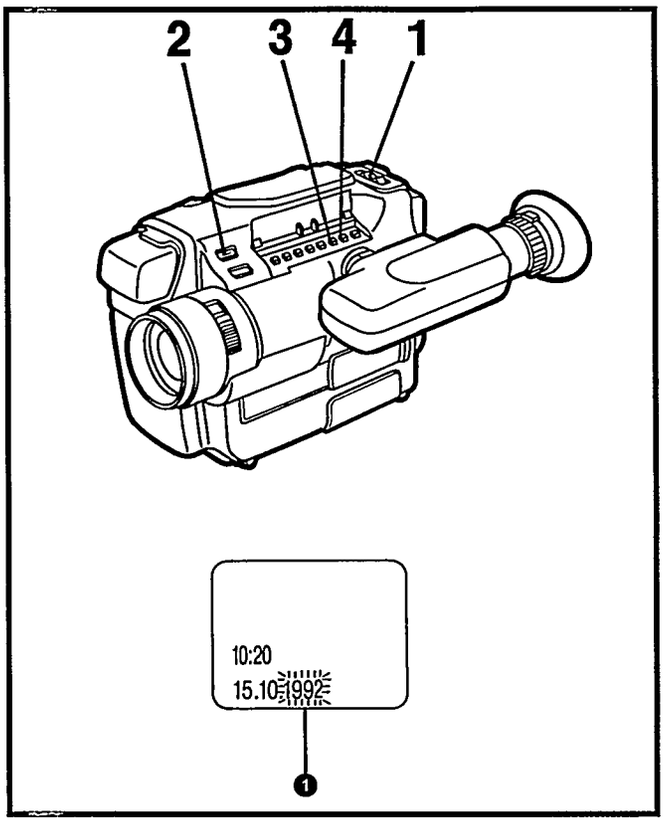
1) Before replacing the back up battery, turn the Camcorder off.
2) To change the back up battery, follow the above operation steps.

Note:
If the date and time indications in the viewfinder are no longer correct after replacing the back up battery, set the date and time as explained on the following page.

CAUTIONS FOR BATTERY REPLACEMENT

- The life of the battery is about one year. Inspect and, if necessary, replace the battery once a year.
- Load the new battery with its polarities (+ and –) correctly aligned.
- Remove the spent battery immediately and dispose of it.
- Do not try to short-circuit, recharge or heat the battery and do not throw it into a fire.

Setting the date and time



1 Press and slide the Operation switch to "CAMERA".

2 Press the DATE/TIME button.

3 Keep the DATE/TIME SELECT button pressed for more than 2 seconds.

- The year portion ❶ of the Date/time indication will start to flash.
- The flashing portion of the Date/time indication can be changed with the DATE/TIME SELECT button in the following order:

Year → Month → Day → Hour → Minute
Set

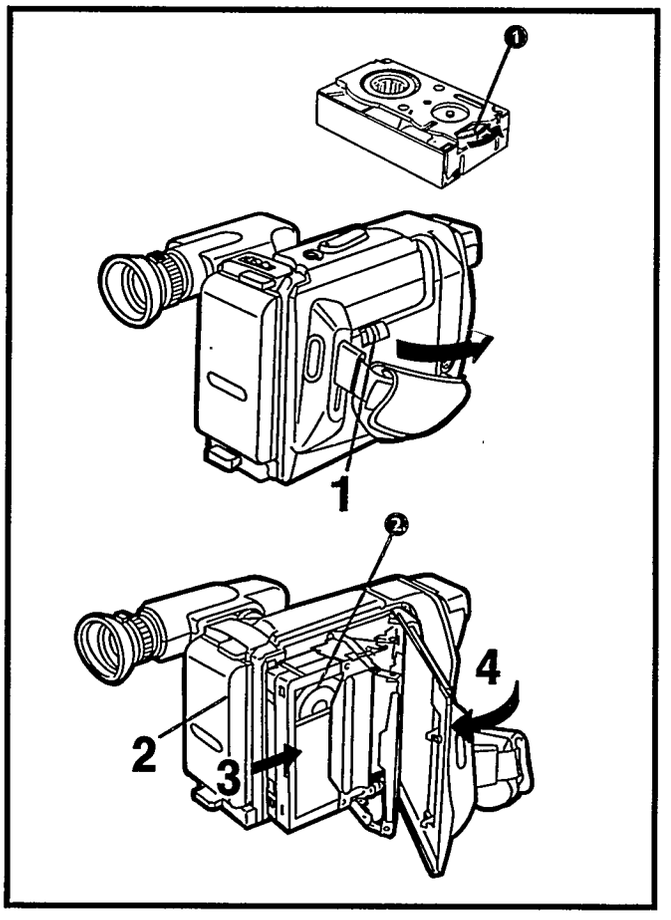
4 Press the DATE/TIME SET button to change the figures.

YEAR : 1990 → 1991 → ..... → 2089
MONTH : 1 → 2 → ..... → 12
DAY : 1 → 2 → ..... → 31
HOUR : 0 → 1 → ..... → 23
MINUTE : 00 → 01 → ..... → 59

- Repeat procedures 3 and 4 until all items have been set correctly.
- Once the date and time are set, press the DATE/TIME SELECT button, in response to an accurate time source, the clock will begin to function.

English

Video Cassette



Inserting the video cassette

- Use only S-VHS-C or VHS-C Compact Video Cassettes.

Before inserting the cassette, make sure that the tape is not loose. If it is loose, tighten it by turning the cog wheel ❶ on the side of the cassette in the direction of the arrow.

1 Slide the cassette compartment cover opening knob and open the cassette compartment cover.

2 Press the EJECT button.

3 Insert the video cassette with the cassette window ❷ facing upward and the safety tab to the rear.

4 Close the cassette compartment cover until it locks with a click.

Removing the video cassette

Make sure that power is supplied to the Camcorder.

1 Slide the cassette compartment cover opening knob and open the cassette compartment cover.

2 Press the EJECT button.

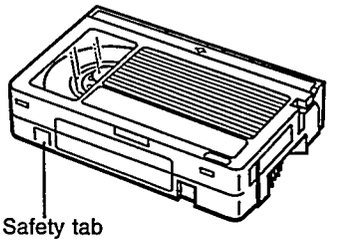
- A few seconds must elapse before the cassette can be removed.

3 Pull out the video cassette.

4 Close the cassette compartment cover until it locks with a click.

Notes:

- *Recording onto prerecorded tapes automatically erases the previously recorded video and audio signals.*
- *An inverted cassette cannot be inserted.*
- *Do not load and unload the cassette repeatedly without allowing the tape to run at all. This will slacken the tape and thereby damage it.*
- *The cassette is equipped with a safety tab to prevent accidental erasure. When the tab is removed, recording is impossible. If you wish to record on a cassette whose tab has been removed, use adhesive tape to cover the slot.*
- *To avoid excessive exposure to dust and fingerprints, do not open the front tape cover.*

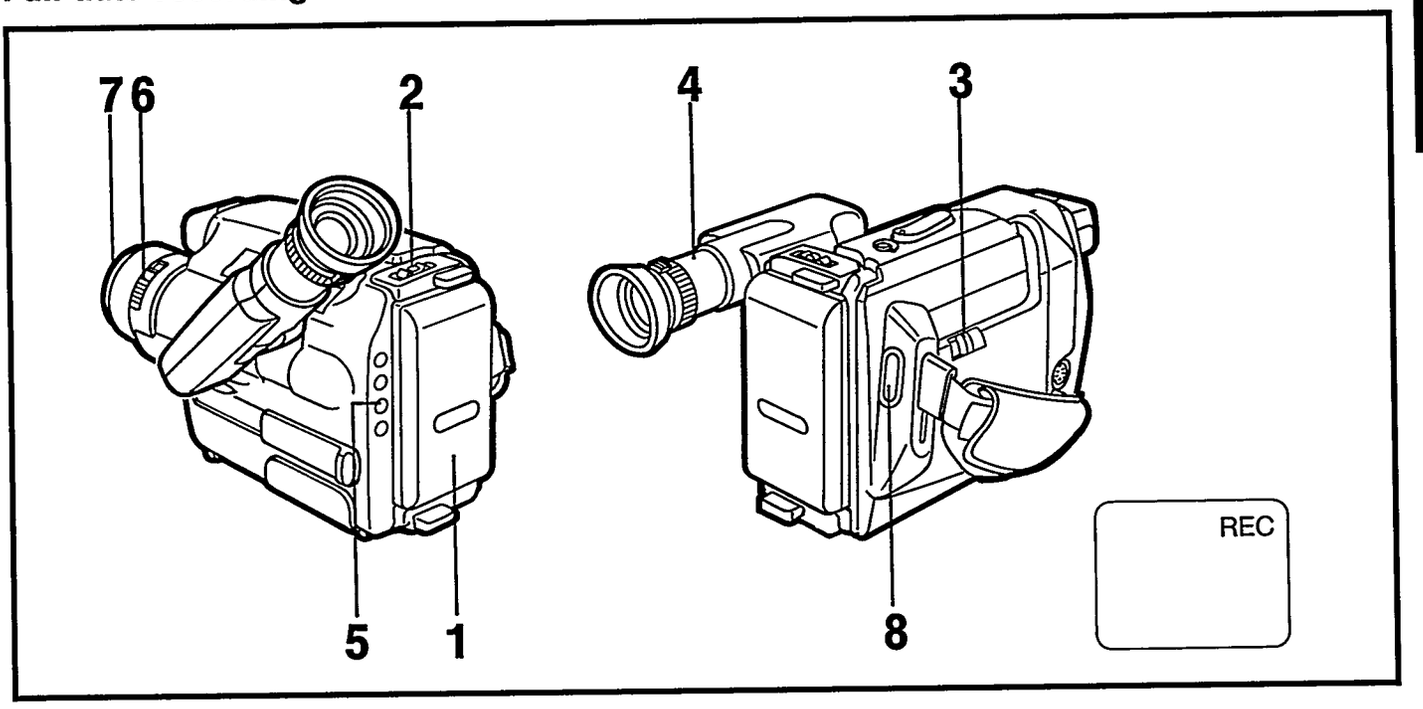


Storage of cassettes

- Avoid exposing the cassettes to direct sunlight. Keep them away from heaters.
- Avoid storing the cassettes in humid or dusty places.
- Do not drop the cassettes. Do not expose them to violent vibrations or shocks.
- Do not expose the cassettes to strong magnetic fields (near a motor, transformer or magnet).
- Place the cassettes in cassette cases and position them vertically.

Recording

Full auto recording



1 Connect a power supply. (Fully charged battery pack, AC adaptor or car battery cord.)

2 Press and slide the Operation switch to "CAMERA".

3 Insert a cassette (with intact erasure prevention tab).
- A few seconds after closing the cassette compartment cover, the Camcorder will be in the Recording pause mode.

4 Extend the viewfinder.

5 Press the S-VHS/SP/LP button to select S-VHS or VHS and SP or LP (Standard Play or Long Play).

6 Slide the Mode select switch to "FULL AUTO".

7 Remove the lens cap.

8 Press the Start/stop button to start recording.

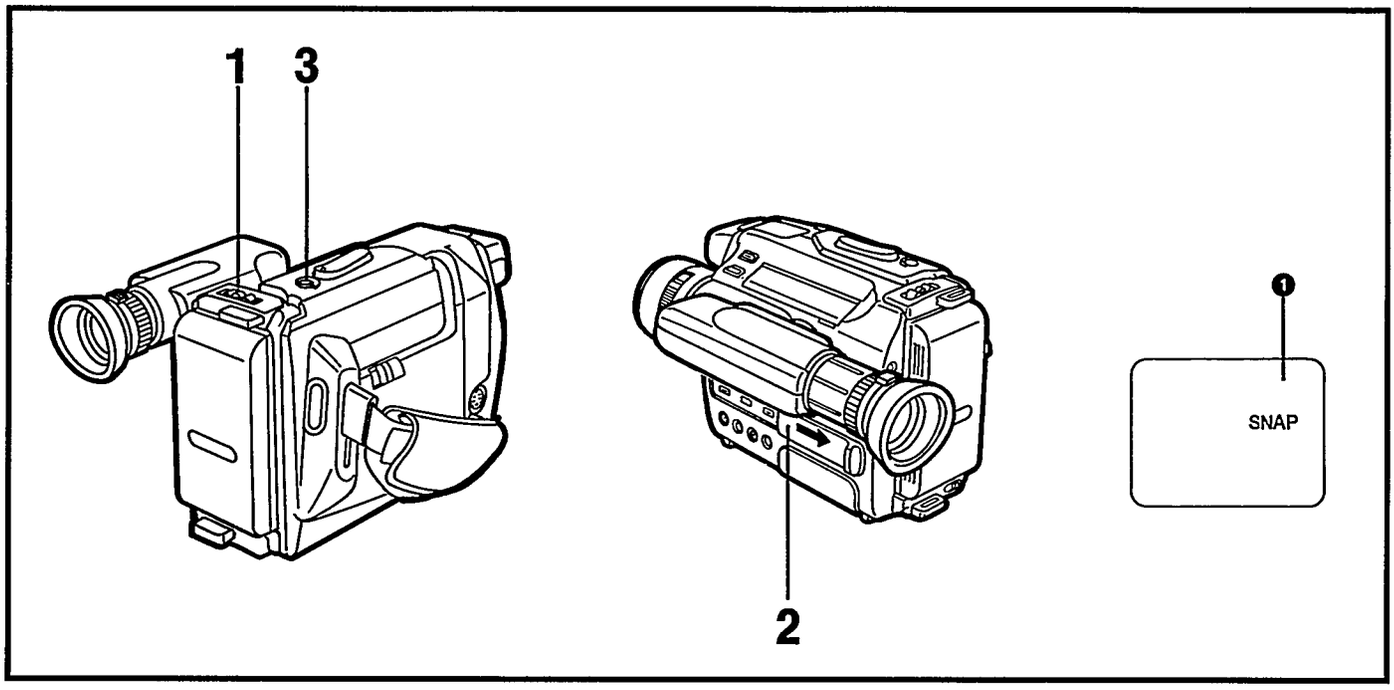
■ To pause while recording
Press the Start/stop button.

■ To record the next scene(s)
Press the Start/stop button again.

■ To stop the recording
Press the Start/stop button to stop recording and then set the Operation switch to "OFF".

Note:
If the Camcorder is left in the Recording pause mode for more than 6 minutes, the Recording pause mode will be cancelled and the viewfinder will be turned off (recording lock mode). To resume recording, set the Operation switch to "OFF" and then to "CAMERA" again. If the Camcorder is left in the Recording lock mode for more than 48 hours, it will automatically switch off completely.

Snapshot recording



Using the digital shooting function

- Simply by pressing the SNAPSHOT REC button, a still picture can be recorded for approx. 5 seconds. Since anyone can use this Camcorder with the same case as a still camera, it's easy to ask somebody to take your picture on video by pressing the SNAPSHOT REC button. This makes it even easier for you to get into your own movies.

1 Press and slide the Operation switch to "CAMERA".

2 Slide the digital mode cover all the way to the right until it locks with a click.

- When the digital mode cover is not slid completely to the right, snapshot recording is not possible.

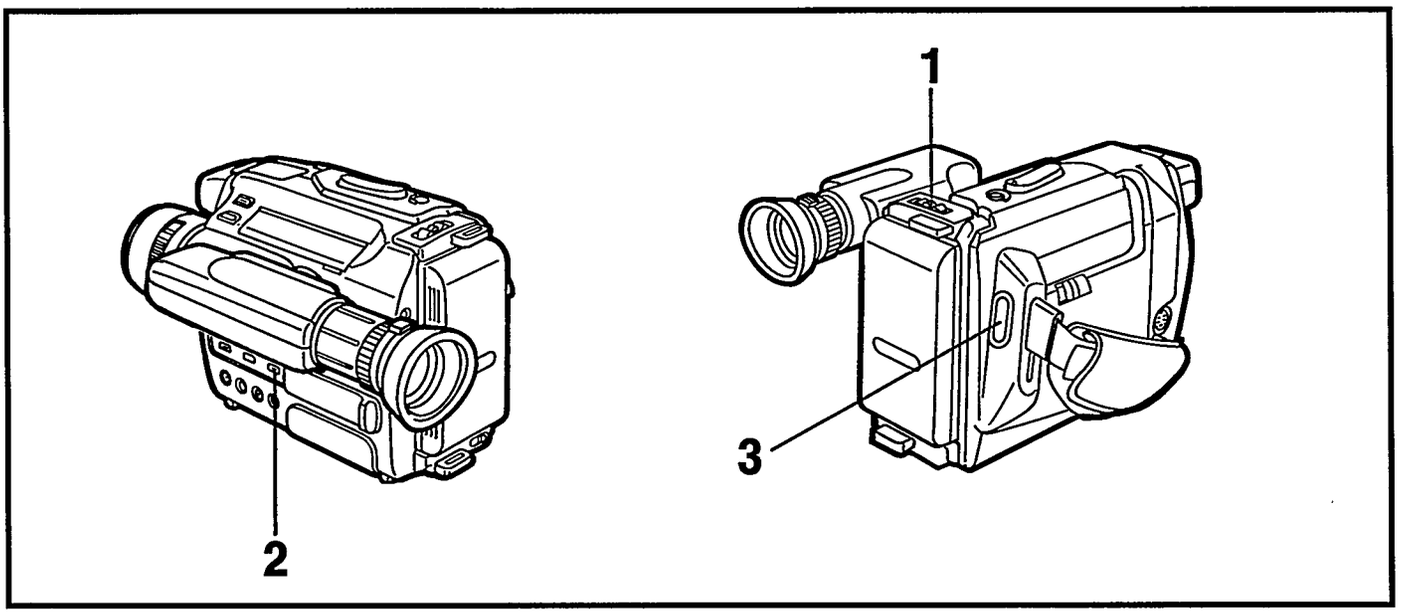
3 Press the SNAPSHOT REC button.

- The "SNAP" indication ❶ is indicated in the viewfinder during snapshot recording.
- The still picture will be recorded for approx. 5 seconds and the Camcorder will then switch back to the Recording pause mode.

Hints for recording snapshot pictures

By combining this function with the high speed shutter, it is possible to shoot still pictures of fast actions for motion analysis.

- To prevent picture distortion, do not move or shake the Camcorder during snapshot recording.
- Since the still picture is recorded from the digital image memory, the picture quality may be slightly inferior to that of normally recorded pictures.
- When the snapshot recording function is used repeatedly, wait at least 2 to 3 seconds before pressing the SNAPSHOT REC button again.



Still picture recording

Using the digital shooting function

Still picture recording of any desired duration.

1 Press and slide the Operation switch to "CAMERA".

2 Press the STILL/STROBE button.
- The image in the viewfinder stands still.
- By pressing the STILL/STROBE button repeatedly, the mode can be changed in the following order:

→ NORMAL → STILL → STROBE →

3 Press the Start/stop button.
- The still picture in the viewfinder will be recorded.

■ To cancel this function
Press the STILL/STROBE button two times until the viewfinder returns to normal.

Hints for shooting still pictures
- To prevent picture distortion, do not move or shake the Camcorder during still picture shooting.
- Since the still picture is recorded from the digital image memory, the picture quality may be slightly inferior to that of normally recorded pictures.

Strobe effect recording

Using the digital shooting function

For continuously recording 6 still images per second.

1 Press and slide the Operation switch to "CAMERA".

2 Press the STILL/STROBE button twice.
- The picture in the viewfinder will also have a strobe effect.

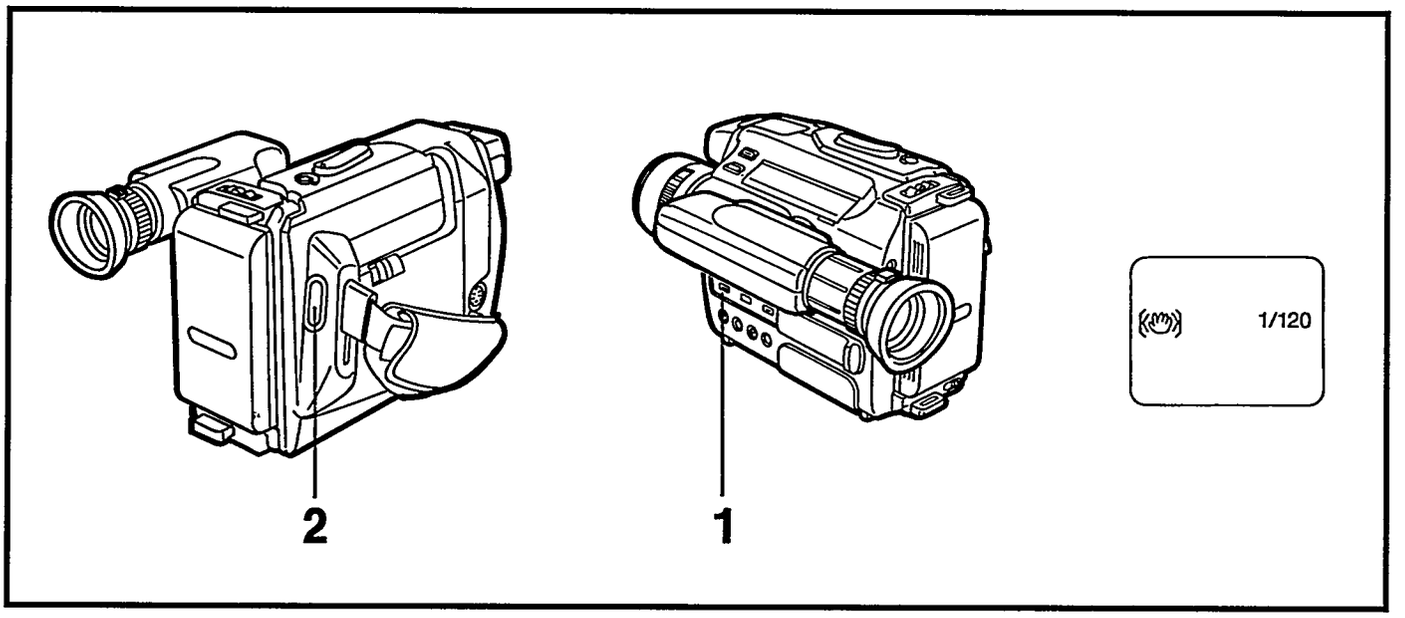
3 Press the Start/stop button.
- Continuous recording with the strobe effect is now possible.

■ To cancel this function
Press the STILL/STROBE button until the viewfinder returns to normal.

Hints for recording pictures with the strobe effect
By combining the strobe function with the high speed shutter, the strobe effect can be increased. (For outdoor shooting, the 1/250-second shutter speed is recommended. Refer to page 31.)

Notes:
- *When shooting under fluorescent lamps, the brightness of the pictures may fluctuate.*
- *Since the strobe pictures are recorded from the digital image memory, the picture quality may be slightly inferior to that of normally recorded pictures.*

Automatic image stabilizer



This function automatically corrects the slight shaking of the camera that often occurs during hand-held camera shooting and zooming. It is especially practical for the following shooting situations:

- Zooming in on a subject.
- Shooting while walking.
- Shooting from inside a moving vehicle.

1 Press the I. (Image) STABILIZER button.
- When the automatic image stabilizer function is activated, the "(hand)" indication, and the shutter speed indication (1/120) appear in the viewfinder.

2 Press the Start/stop button.
- Recording with the automatic image stabilizer function will start.

■ To cancel this function
Press the I.STABILIZER button.

Hint for shooting with the automatic image stabilizer function

- The subject appears slightly enlarged in the viewfinder and the shutter speed is set to 1/120 second (the "1/120" indication in the viewfinder is displayed) instead of the normal 1/50 second (which will not be indicated).

Notes on recording with the automatic image stabilizer function

■ Recording conditions

- The picture stabilizing effect may not be sufficient, if the shaking of the Camcorder is strong or in the following recording conditions:
  - A subject with horizontal or vertical stripes.
  - An extremely bright subject.
  - A dark subject. In this case, increase the amount of light.
  - A subject lit by many fluorescent lamps.
  - A fast-moving subject.
- When recording under fluorescent lamp, the brightness of the picture may fluctuate.
- The resolution of the picture will be slightly reduced.

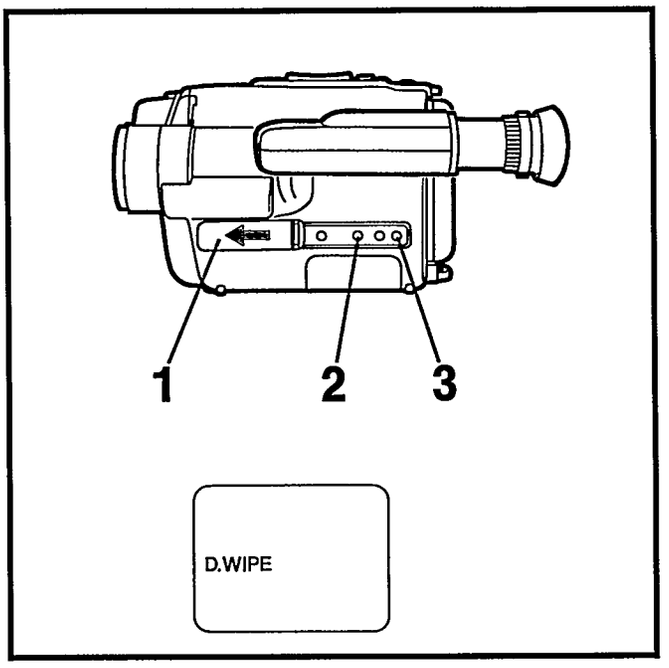
■ Recording with the high speed shutter

- If the SHUTTER button is pressed to change the shutter speed while the Camcorder is in the automatic image stabilizer mode, the shutter speed will remain at this setting when the automatic image stabilizer mode is cancelled.

■ Shooting with a tripod

- When shooting with a tripod, do not use the image stabilizer function.

Digital wipe recording



1 Slide the digital mode cover to the front of the Camcorder until it locks with a click.
- The Camcorder is now in the Digital mode.

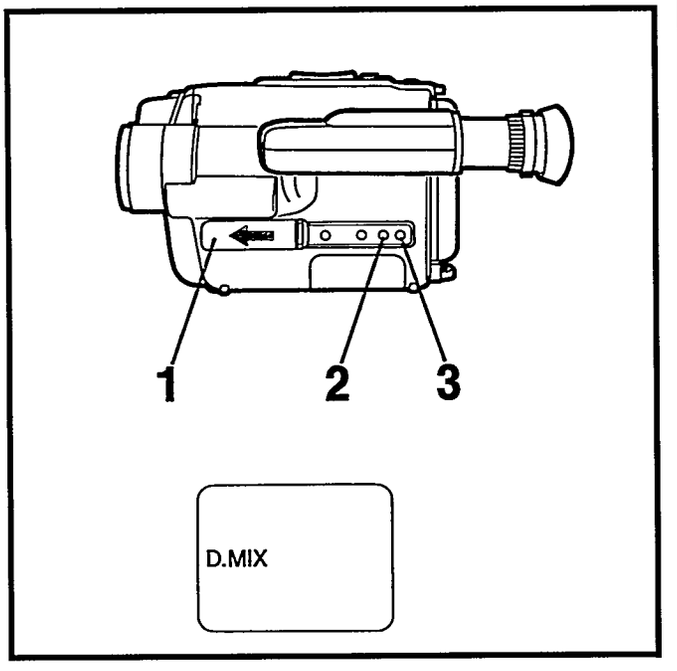
2 With the Camcorder in the Recording pause mode, press the DIGITAL WIPE button.
- The image in the viewfinder will stand still for approx. 2 seconds.

3 Press the DIGITAL START button.
- The still picture input into the memory in step 2 will appear gradually starting from the left side.
- If the DIGITAL START button is pressed one more time, the same picture will disappear gradually starting from the right side.

■ Cancelling the digital wipe function
Slide the digital mode cover fully toward the rear of the Camcorder.

Notes:
- *When the Digital mode is activated, the I. (Image) STABILIZER button, DIGITAL ZOOM button, SNAPSHOT REC button and STILL/STROBE button will not work.*
- *While recording a still picture in the Digital image mix mode, or while operating this mode, or while the gain up function is activated, the digital wipe function will not work.*

Digital mix recording



1 Slide the digital mode cover to the front of the Camcorder until it locks with a click.
- The Camcorder is now in the Digital mode.

2 With the Camcorder in the Recording pause mode, press the DIGITAL MIX button.
- The image in the viewfinder will stand still for approx. 2 seconds.

3 Press the DIGITAL START button.
- The picture of the current scene will gradually fade over to the still picture.
- When the DIGITAL START button is pressed one more time, the still picture will gradually fade back to the picture of the current scene.

■ Recording a current scene together with a Superimposed still picture

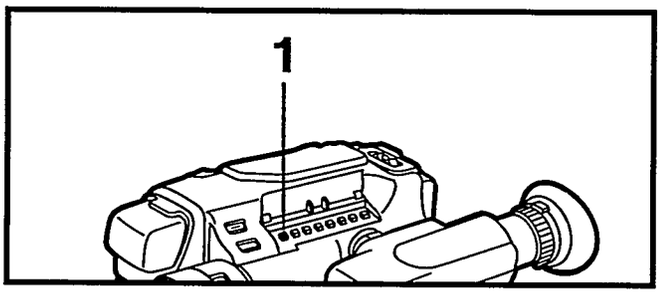
3 Keep the DIGITAL START button pressed for about 2 seconds.

■ Cancelling the digital image mix function
Slide the digital mode cover fully toward the rear of the Camcorder.

Notes:
- *When the Digital mode is activated, the I. (Image) STABILIZER button, DIGITAL ZOOM button, SNAPSHOT REC button and STILL/STROBE buttons will not work.*
- *While recording a still picture in the Digital wipe mode, or while operating this mode, or while the gain up function is activated, the digital mix function will not work.*

Quick review

If you want to review the end of the last recording for confirmation.



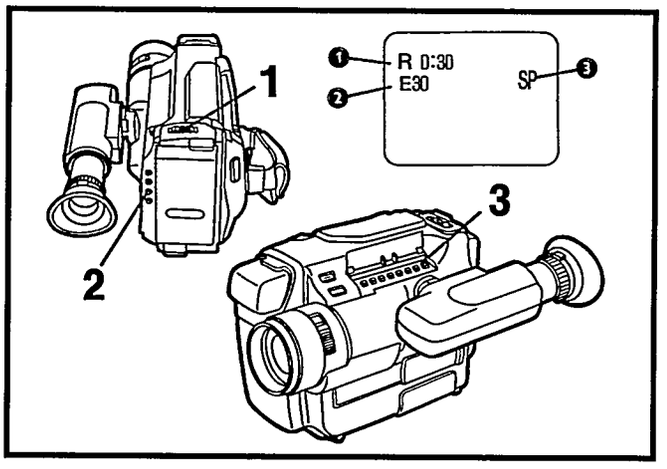
1 Press the REW/⏪ button from the Recording-pause mode.

- The "CHK" indication will appear in the viewfinder, and the tape will be rewound for about 2 seconds of programme time and played back automatically, after which it will go back to the Recording pause mode for the next shot.

Remaining tape time indication

- During recording and playback, the remaining tape time is indicated in hours and minutes in the top left corner of the viewfinder ❶.
- It is important that the correct tape length is selected with the TAPE SELECT button.

After inserting a cassette in the cassette compartment

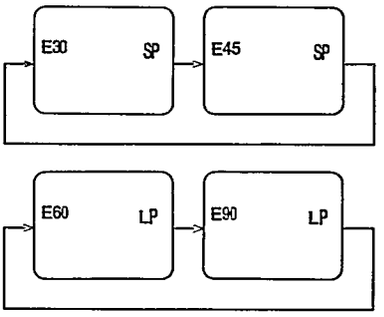


1 Press and slide the Operation switch to "CAMERA".

2 Press S-VHS/SP/LP button. The SP indication ❸ appears in the viewfinder.
(If you want to shoot in the SP mode.)

3 Press the TAPE SELECT button. The E30 indication ❷ appears in the viewfinder.
(If your cassette is the E30 type.)

- The remaining tape time in hours and minutes as well as the length of the inserted tape are indicated.
- At each press of the TAPE SELECT button, the tape length indication in the viewfinder changes as illustrated below.



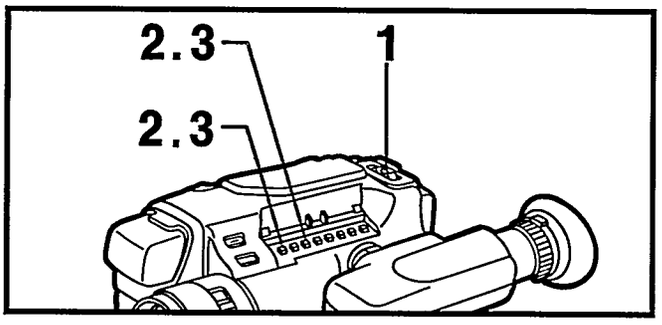
- When recording or playback is started, the "R" indication flashes for a few seconds while the Camcorder calculates the remaining tape time. As soon as the remaining tape time indication appears, the "R" indication remains lit.
(R: means Remaining)

Notes:

- *When the remaining tape time is less than 2 minutes, the indication flashes.*
- *When the cassette is removed from the Camcorder, the indication automatically changes over to the first indication of each mode:*
In the SP mode, it changes over to "E30"
In the LP mode, it changes over to "E60"

Retake

After viewing a recorded segment, you may decide to re-record it immediately. The Retake function is convenient for this.



1 Press and slide the Operation switch to "CAMERA".

2 Keep the REW/⏪ button pressed.
- The recorded scene will be played back at high speed in the reverse direction.

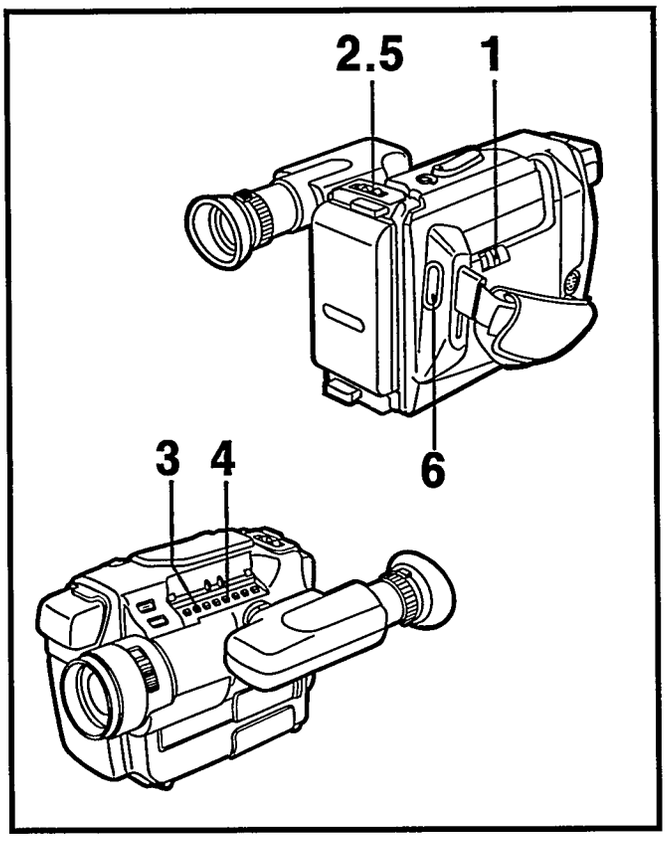
Or keep the ⏩ /FF button pressed.
- The recorded scene will be played back at normal speed in the forward direction.

3 Release the REW/⏪ or ⏩ /FF button after reaching the desired point.

Clean edits

■ How to add new scenes at the end of previous shots

- This function makes it possible to achieve smooth transitions between a previous and the new recording.



1 Insert the prerecorded cassette.

2 Press and slide the Operation switch to "VCR".

3 Press the PLAY button.

4 Press the PAUSE/STILL button after reaching the point where you want to add the next scene.

5 Slide the Operation switch to "CAMERA".

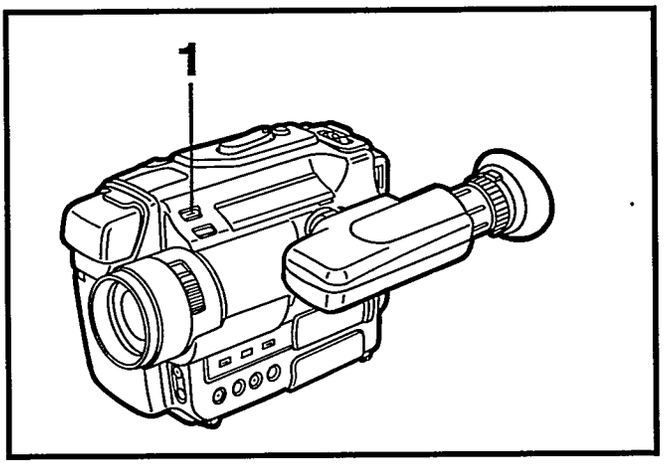
6 Press the Start/stop button to start recording the new scene.

- Recording will start.

Thereby erasing the rest of the previously recorded scene.

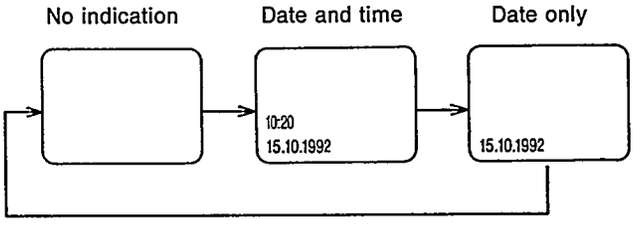
Date/time recording

During recording or in the Recording pause mode, the date/time indication, displayed in the Viewfinder, can also be recorded.



1 Press the DATE/TIME button to select the desired indication.

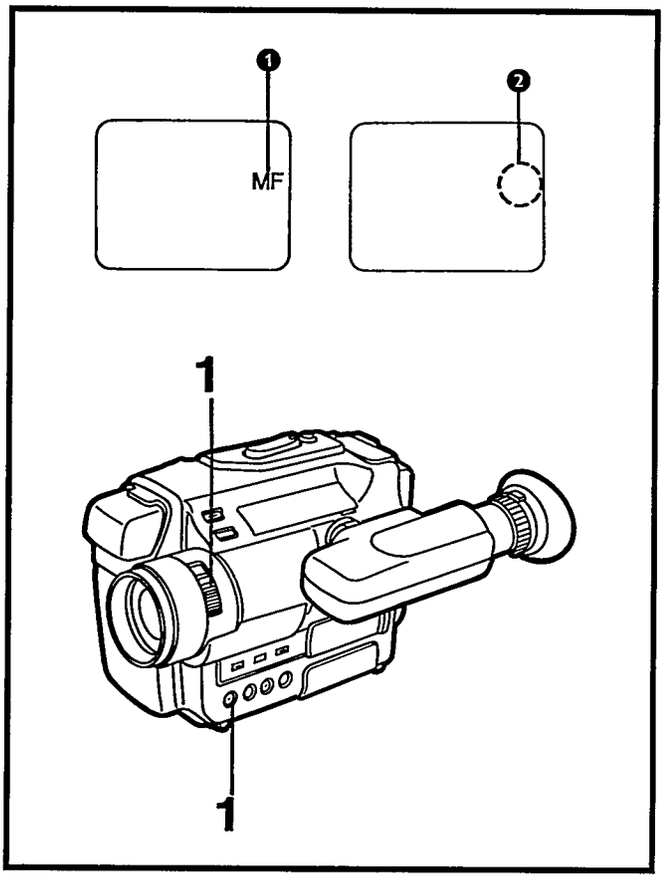
- At each press of the DATE/TIME button, the date/time indication in the viewfinder can be changed in the following order:



Focus

Automatic focus

This Camcorder focuses automatically on almost all subjects.
(No manual operation is necessary.)



When the "MF" indication is not displayed in the viewfinder ❷, the Camcorder is in the Auto focus mode. (MF: means Manual Focus)

- The focus will automatically be adjusted to the subject in the centre of the viewfinder.

■ When the "'MF" indication is displayed in the viewfinder

1 Set the Mode select switch to "FULL AUTO" or press the FOCUS button to activate the Auto focus mode.

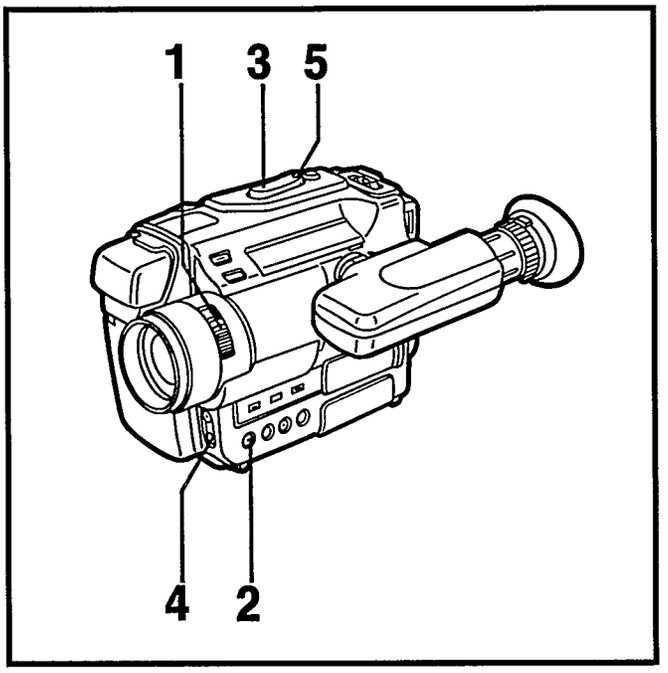
- The "MF" indication in the viewfinder will disappear ❷.

Manual focus

The auto focus system will not provide stable and accurate focus adjustment if you are shooting in the situations listed in the following:

1. Shiny surfaces. Subjects with backlighting or too much light reflection.
2. A subject behind dirty glass.
3. A subject with a part near the Camcorder and another part far away from it.
4. A flat surface, e.g. a white wall.
5. A subject with horizontal stripes.
6. An oblique subject.
   - With the macro close-up function, special lenses or filters.
   - A fast-moving subject.
   - A subject with a dark surface.

In these situations manual focus should be used:



1 Set the Mode select switch to "MANUAL".

2 Press the FOCUS button.
- The "MF" indication appears in the viewfinder.

3 Press the zoom control "T" button to zoom in on the subject to be focussed.

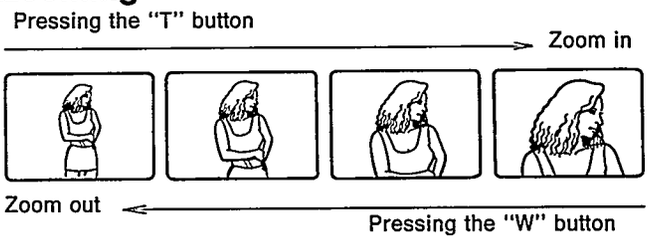
4 Press either + or – button to adjust the focus.

5 Press the zoom control "W" button to zoom back as desired.

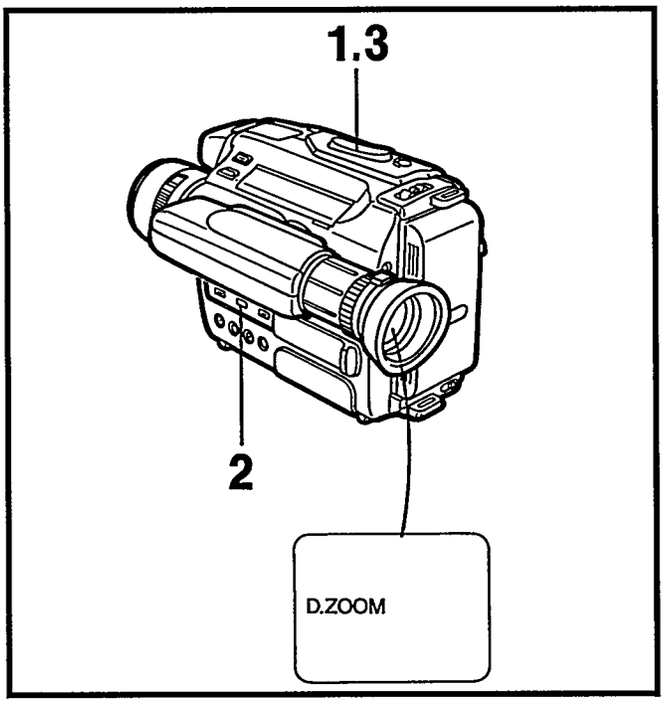
■ To change back to the automatic focus mode
Press the FOCUS button.
- The "MF" indication disappears from the viewfinder.

Note:
When using the manual focus mode, always adjust with the zoom lens in the maximum tele position. This will ensure that focus remains sharp throughout the zoom range from the maximum tele to maximum wide-angle position.

Zooming



Using the power zoom function



■ How to zoom in, or out
To make your zoom shots more impressive and achieve exactly the desired effect, do it the same way as the professionals: before actually shooting, make a trial run of the zooming.

1 Keep the Zoom control "T" button pressed for telephoto.
(The subject appears closer)

Keep the Zoom control "W" button pressed for wide angle.
(The subject appears further away)

Using the power zoom or digital zoom function

With the digital zoom function, it is possible to zoom in on a subject, by a combination of the Zoom control "T" button and DIGITAL ZOOM button, to enlarge it by up to 16 times.

2 Press the DIGITAL ZOOM button.
- When the digital zoom is activated, the "D.ZOOM" indication appears in the viewfinder.

3 Press the Zoom control "T" button.

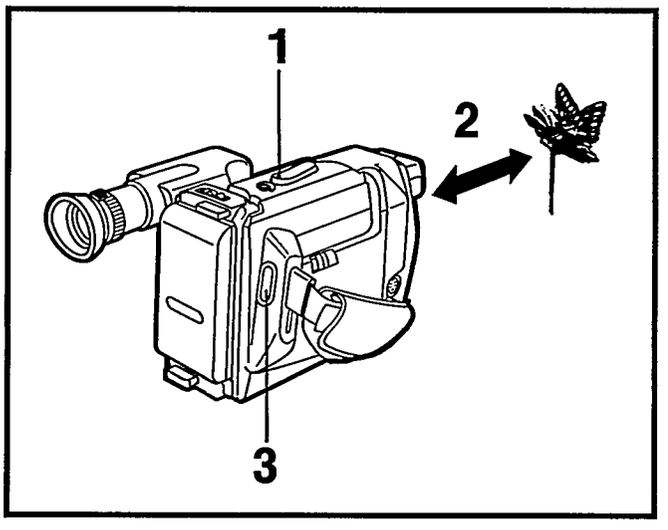
■ To cancel this function
Press the DIGITAL ZOOM button.

Notes:

- *With the digital zoom off, the zoom range is limited to X8.*
- *When the digital zoom is activated, the picture is magnified electronically increasing the zoom range to X16.*
- *The digital zoom will slightly decrease the picture resolution of detail.*
- *When zooming in on the subject all the way to the maximum tele position, slight after-image distortion may occur.*
- *When shooting under very bright conditions, the after-image can be eliminated by selecting a shutter speed of 1/120 or 1/250 second.*

Macro close-up

The macro close-up function makes it possible to shoot very small subjects, photos, printed matter, insects and many other things.



1 Keep the Zoom control "W" button pressed to zoom to the maximum wide-angle position.

2 Approach the subject to the desired distance.
- The focus will be adjusted automatically (Auto focus mode).

3 Press the Start/stop button.
- Recording will start.

Hints for shooting with the macro close-up function

- To get more or less or the subject into the picture, change the distance between the lens and the subject; do not use the Zoom control (T/W) button.
- As the depth of field is very small in macro shooting, even slight camera movements can cause the subject to be out of focus. Therefore, we recommend that you use a tripod.
- When shooting pictures in a photo album or a similar situation with insufficient lighting, use an extra light.
- When the zoom lens is in its maximum tele position, the minimum shooting distance between the lens and the subject is 1 m.
- In macro close-up shooting, the subject can be approached down to a minimum distance of 5 mm between the lens and the subject.
  It is recommended to use the Auto focus mode. However, with a stable camera position (tripod, etc.), the manual focus mode can also be used.

White balance adjustment

Automatic white balance

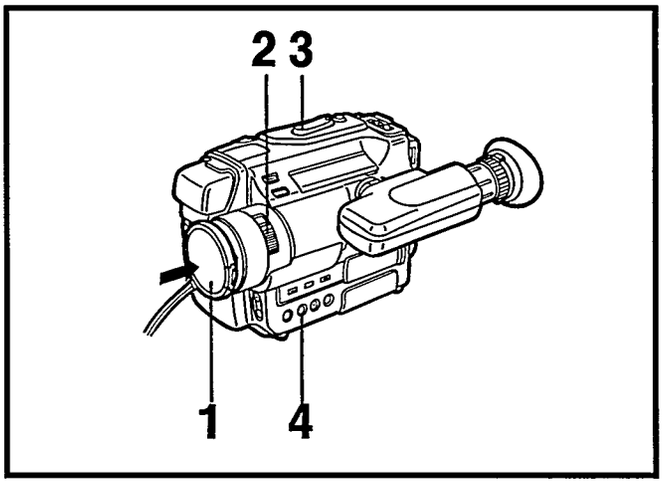
To human eyes, white subjects appear as white even under different lighting conditions. A Camcorder, however, would give these white subjects, depending on the colour of the light source, a reddish or bluish tint. To attain recordings with natural colours, it is necessary to adjust the sensor in the camera to the existing colour of the light. This adjustment is called "White balance adjustment."
This camera offers two modes for this adjustment: automatic and manual "White balance adjustment".
If the Camcorder is moved from outdoors to indoors during recording, the picture will initially take on a slightly reddish cast but it will gradually regain its natural colours.
In the following recording situations, the automatic white balance adjustment may not provide satisfactory results; use the manual white balance adjustment mode instead.

1. When recording under mercury-vapor, natrium or some types of fluorescent lamps.
2. When intense lighting is used, e.g. from a halogen lamp, or when the colour temperature of the light source is low.
3. When recording under lighting conditions which change suddenly.
4. When recording outdoors at sunrise or sunset.
5. When recording firework displays.
6. When recording under weak illumination.
7. When using a grey filter (ND) or other special filters.
8. When using a conversion lens.
9. When recording a subject of a single colour or background.

For further information, a table on page 41 shows the relationship between light levels and colour temperature.

Manual white balance

(For recording under a single light source)

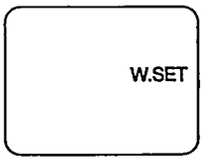


1 Attach the lens cap to the lens.

2 Set the Mode select switch to "MANUAL".

3 Keep the Zoom control "T" button pressed until the screen in the viewfinder becomes completely white.

4 Keep the W.BALANCE button pressed for more than 1 second.
The following indications in the viewfinder inform you about the state of the adjustment:



1. "WHITE" flashes slowly ..... Not adjusted
2. "WHITE" flashes rapidly ..... During adjustment
3. "W.SET" is lit ..... Adjustment is finished

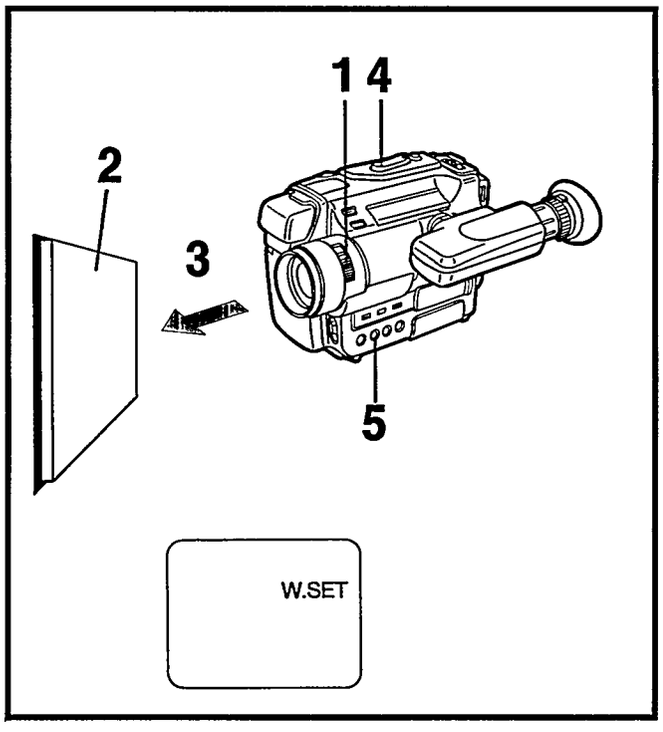
The Camcorder is now ready for recording.

■ To change back to the automatic white balance adjustment mode
Press the W.BALANCE button quickly. The "W.SET" indication in the viewfinder will disappear.

■ Automatic recall of the previous white balance setting

- After setting the Operation switch to "OFF" and later to "CAMERA" again, the "WHITE" indication will flash slowly, however, the last previous white balance setting is still maintained.
  However, to ensure the best possible colour reproduction, adjust the white balance again.
  The last previous white balance setting is also maintained after pressing the REW/⏪ button to confirm the end of the previously recorded scene.
  But after removing the battery pack (or disconnecting the AC adaptor from the Camcorder), the last previous white balance setting will no longer be maintained.
- When moving the Camcorder from indoor to outdoor or vice versa, be sure to adjust the white balance, as the colour of the light will have changed considerably.

For shooting under several light sources or if the illumination is weak (indoor, etc.)



1 Set the Mode select switch to "MANUAL".

2 Prepare some white paper or some other purely white subject.

3 Remove the lens cap and point the Camcorder at the white subject.

4 Keep the Zoom control "T" button pressed until the screen in the viewfinder becomes completely white.

5 Keep the W.BALANCE button pressed for more than 1 second.

The following indications in the Viewfinder inform you about the state of the adjustment:

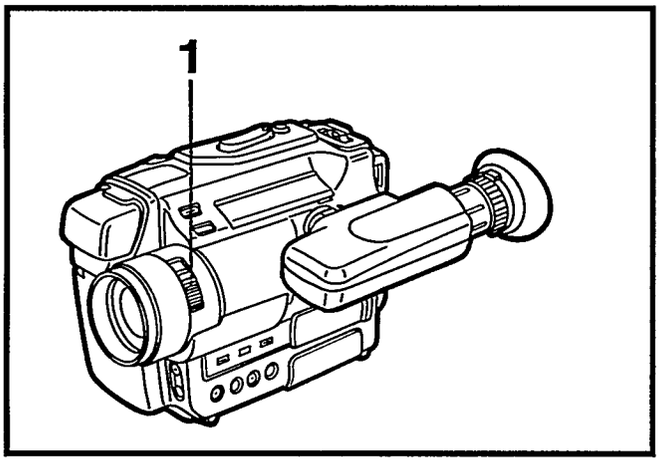
1. "WHITE" flashes slowly .... Not adjusted
2. "WHITE" flashes rapidly ... During adjustment
3. "W.SET" is lit ..... Adjustment is finished.

The Camcorder is now ready for recording.

■ To change back to the automatic white balance adjustment mode
Press the W.BALANCE button quickly. The "W.SET" indication in the viewfinder will disappear.

LOW LIGHT mode

Shooting landscapes at dusk or other evening scenes.



1 Set the Mode select switch to "LOW LIGHT".

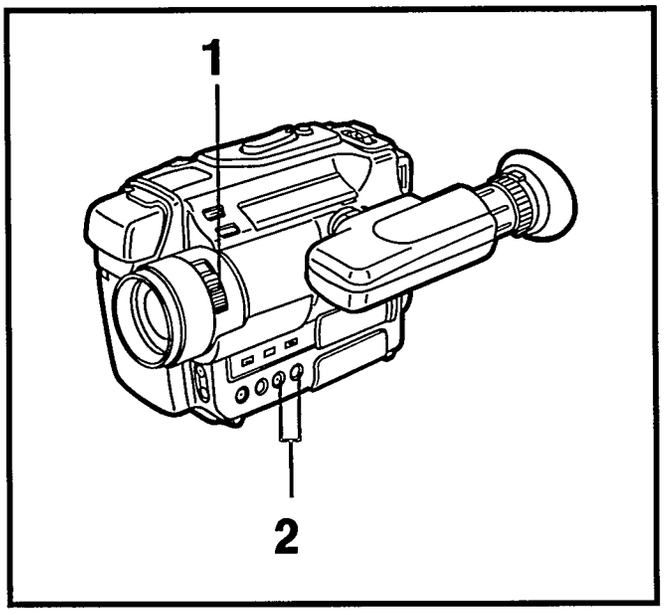
- This increases the sensitivity compared to the "FULL AUTO" or "MANUAL" settings of the Mode select switch and assures stable images with a relatively weak contrast.

Notes:

- *In extremely dark places, this mode will not be able to provide satisfactory recording results.*
- *Even if this mode is used for outdoor shooting in the daytime, the result will be almost the same as when the Mode select switch is set to "FULL AUTO" or "MANUAL".*

Iris

This function is effective when shooting a backlit scene.



1 Set the Mode select switch to "MANUAL".

2 Press either the IRIS + or – button.

- With each press of the IRIS + button, the brightness of the picture will be increased by 3 f-stops.
- With each press of the IRIS – button, the brightness of the picture will be decreased by 3 f-stops.

■ To return to the standard iris setting

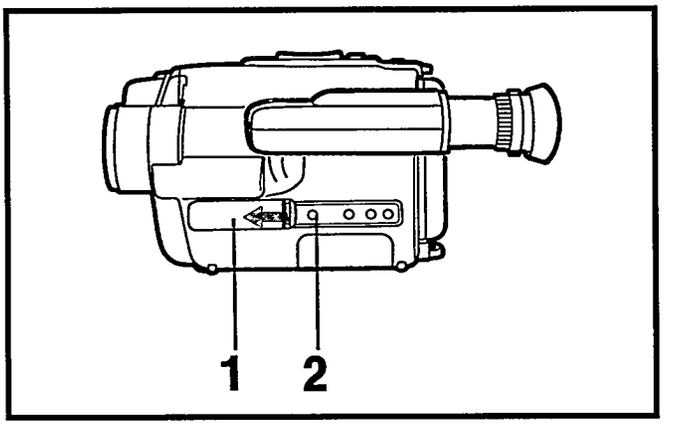
- Press both the IRIS + and – buttons simultaneously for more than 1 second.
- Returning to the standard iris setting is also possible by setting the Mode select switch to "FULL AUTO".

Cautions for recording backlit subjects

- The sky may become whitish.
- In the case of extremely strong backlighting it may not be possible to brighten up the subject sufficiently.
- When recording with the sun striking the subject at an angle, star-shaped light reflexes may be recorded in the picture.

GAIN up function

This function is used when shooting in the dark.

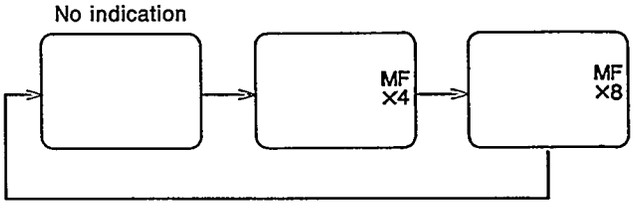


1 Slide the digital mode cover to the front of the Camcorder until it locks with a click.

- The Camcorder is now in the Digital mode.

2 Press the GAIN UP button.

- By pressing the GAIN UP button repeatedly, the degree of sensitivity can be changed as follows:

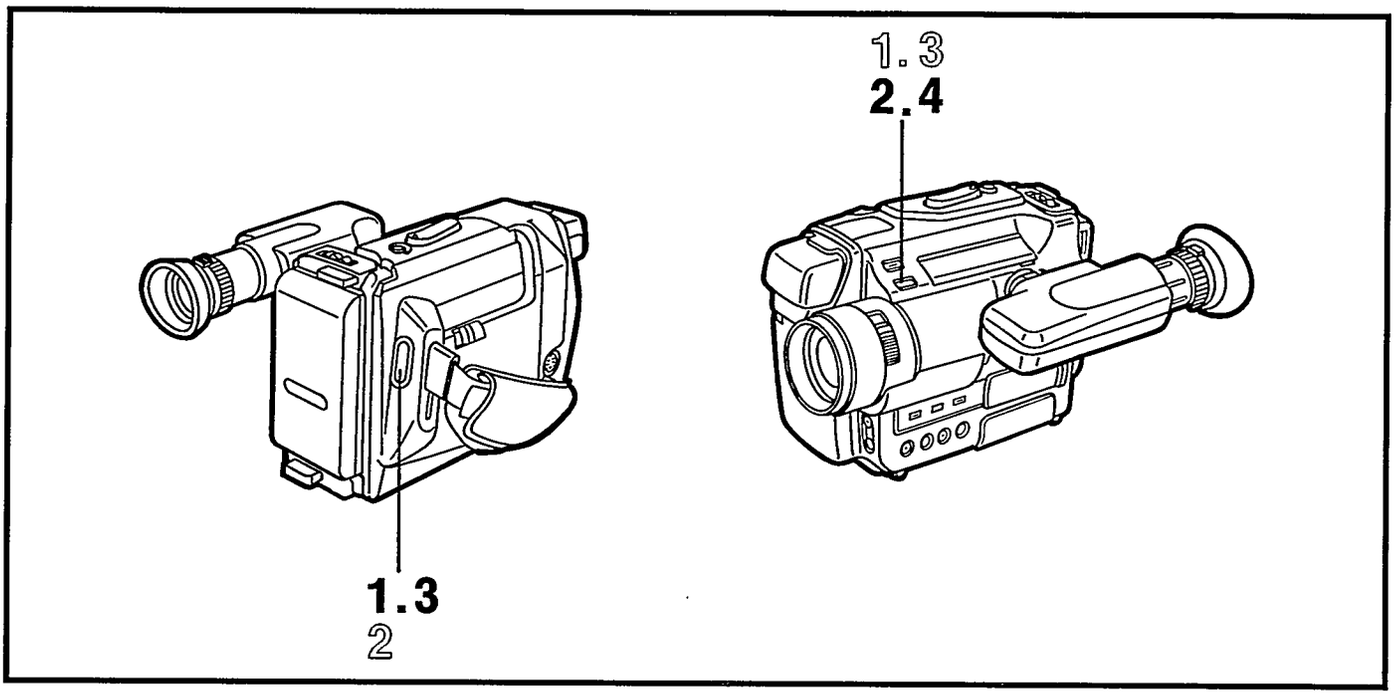


Notes:

- *Some after-image distortion will occur.*
- *When the Digital mode is activated, the I.(Image) STABILIZER button, DIGITAL ZOOM button, STILL/ STROBE button and SNAPSHOT REC button will not work.*
- *When the gain up function is activated, the Digital wipe function and the Digital mix Function will not work.*
- *While recording a still picture in the Digital wipe mode or in the Digital mix mode, or while operating these modes, the gain up function will not work.*
- *The High-speed shutter mode will be cancelled automatically.*
- *In the gain up function mode, the focus must be adjusted manually.*

Fader

This Camcorder incorporates a fader function which allows smooth video/audio fade-in and fade-out with a black blank screen. The fader is simultaneously activated with the recording Start/stop button.



Fade-in

1 Press the Start/stop button to stop recording.

2 Keep the FADE button pressed.

3 After the picture in the viewfinder has disappeared, press the Start/stop button to start recording.

4 After about 3 seconds, release your finger from the FADE button.
The picture will fade in.

Fade-in

Fade-out

1 Keep the FADE button pressed during recording.

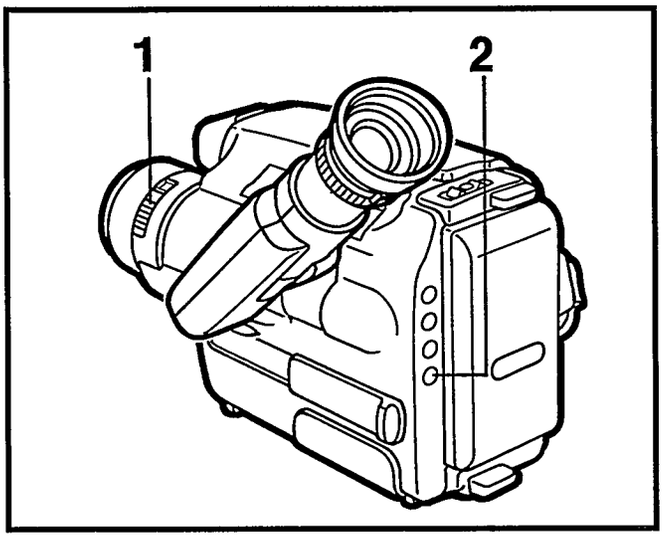
2 After the picture in the viewfinder has disappeared, press the Start/stop button to stop recording.

3 Release your finger from the FADE button.

Fade-out

High speed shutter

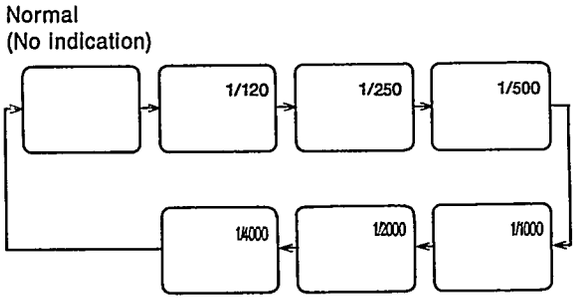
The Camcorder is equipped with a selectable multi-speed shutter that allows better recording of quick movements for sharp, clear stills or slow-motion playback. Select this mode when taking fast-action shots that you want to play back later on a VCR equipped with the Still or Slow-motion mode.



1 Set the Mode select switch to "MANUAL".

2 Press the SHUTTER button repeatedly to select the desired shutter speed.

- The shutter speeds change in the following sequence.



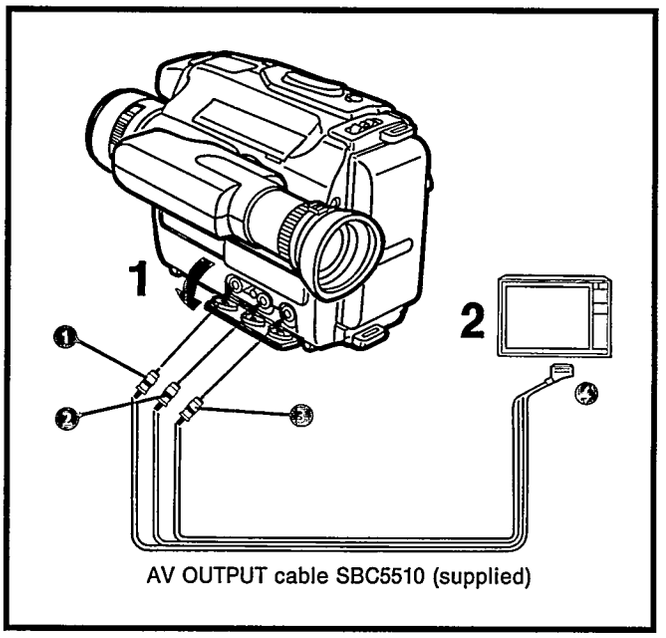
Conditions for recording with the high speed shutter

- The subject must be brightly lit, with little shade, in the sunlight or other strong illumination.
- When shooting under fluorescent lamps, the picture will be adversely influenced by flickering.
- When the picture is played back in the normal playback mode, the picture movement may not be as smooth as normal.
- The playback picture will be slightly darker than a picture recorded without using the high speed shutter function.

Connections

Playback via a TV set using the supplied AV output cable (SBC5510)

- Turn off the power to the Camcorder and TV set.



1 Remove the socket cover.

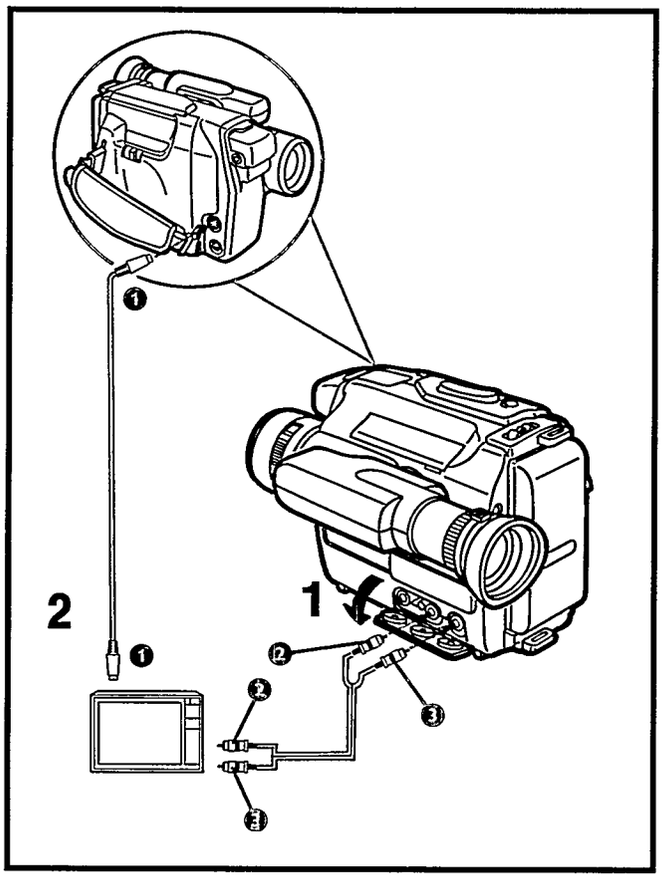
2 Connect the Camcorder to the TV set.

Camcorder		TV Set
Video output socket	❶	
Audio output socket (L)	❷	❹ AV input socket
Audio output socket (R)	❸	

■ Activate the playback operation
Refer to page 34.

Playback via a TV set using the supplied S-VIDEO cable (SBC5500)

- Turn off the power to the Camcorder and TV set.



1 Remove the socket cover.

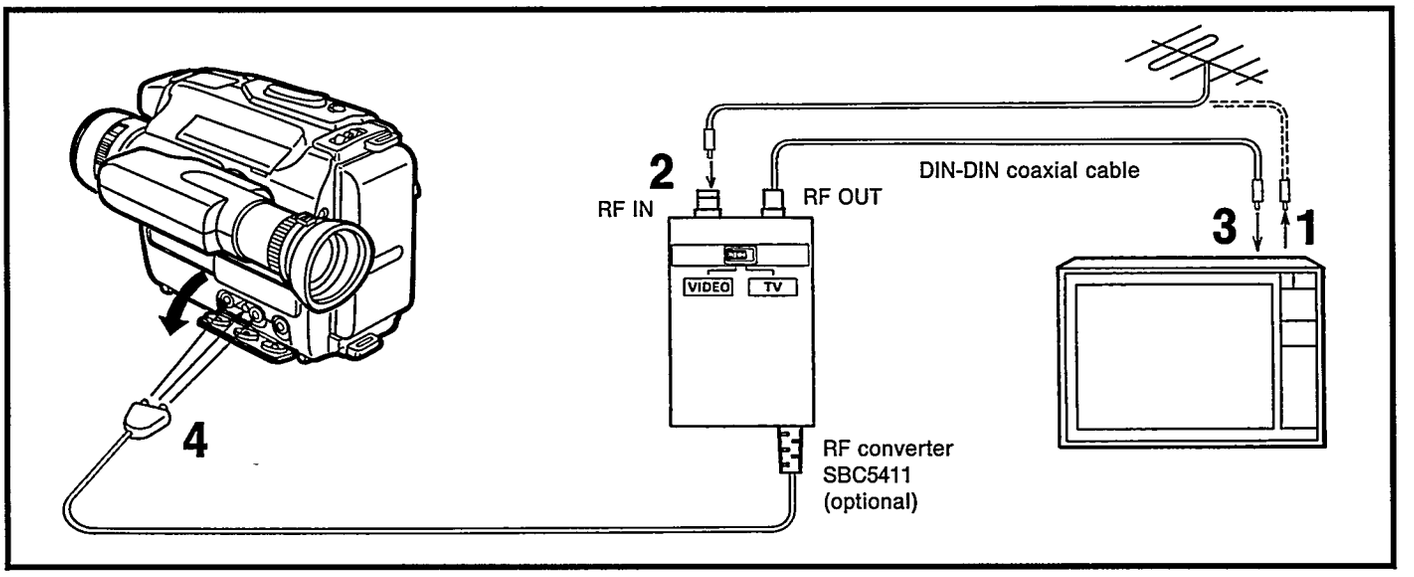
2 Connect the Camcorder to the TV set.

Camcorder		TV Set
S-VIDEO output socket	❶	❶ S-VIDEO input socket
Audio output socket (L)	❷	❷ Audio input socket (L)
Audio output socket (R)	❸	❸ Audio input socket (R)

■ Activate the playback operation
Refer to page 34.

Connection to a television not equipped with an Euroconnector

Use the RF converter SBC5411 (optional) for this connection.



1 Remove the aerial cable from the TV receiver.

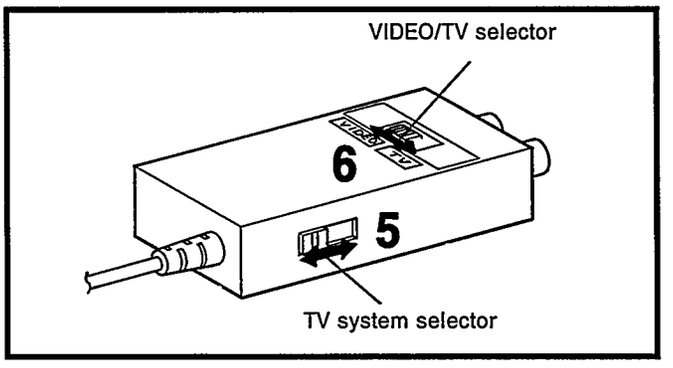
2 Connect the aerial cable to the RF IN socket of the RF converter.

3 Connect the RF OUT terminal of the RF converter to the aerial terminal of the TV receiver using a DIN-DIN coaxial cable, supplied with the RF converter.

4 Remove the socket cover and connect the input cable of the RF converter to the VIDEO/AUDIO/DC OUT sockets on the Camcorder.

5 Set the TV system select switch, on the side of the RF converter, according to the TV system used in your area.
G : For continental Europe
I : For U.K.

6 Set the VIDEO/TV select switch to "VIDEO".

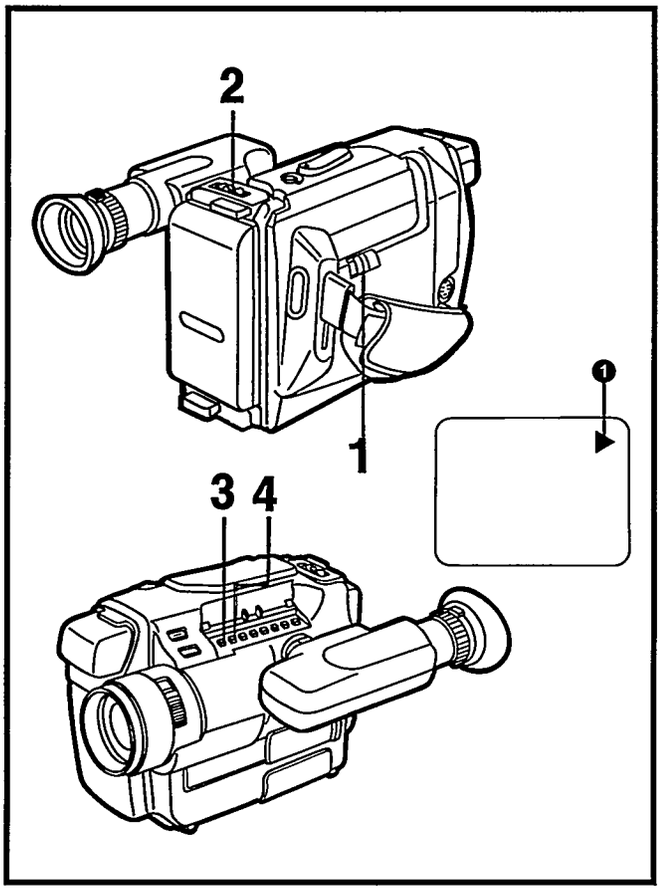


Selection of the VIDEO/TV
VIDEO : Used for the playing back a video cassette on the Camcorder.
TV : Used for watching TV.

■ Activate the playback operation
Refer to page 34.

Playback

- The recorded tape can be played back in the viewfinder or on a TV set.



1 Press the EJECT button and insert the recorded cassette.
Refer to page 16.

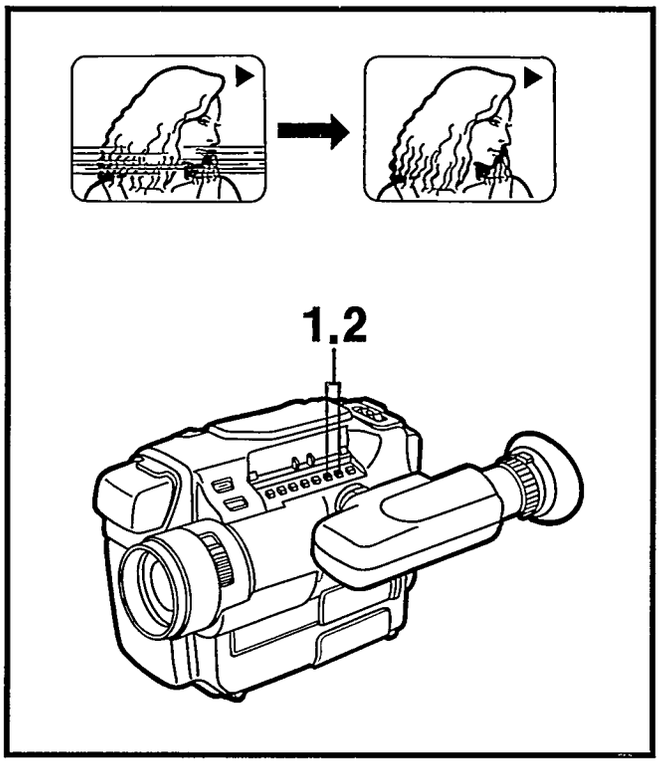
2 Press and slide the Operation switch to "VCR".

3 Press the REW/⏪ button.
- The tape will stop automatically when it reaches the beginning of the tape.

4 Press the PLAY button.
- Playback starts.
- The Play ▶ indication appears in the viewfinder. The tape will be rewound automatically when it reached the end of the tape.

■ To stop playback
Press the STOP button.

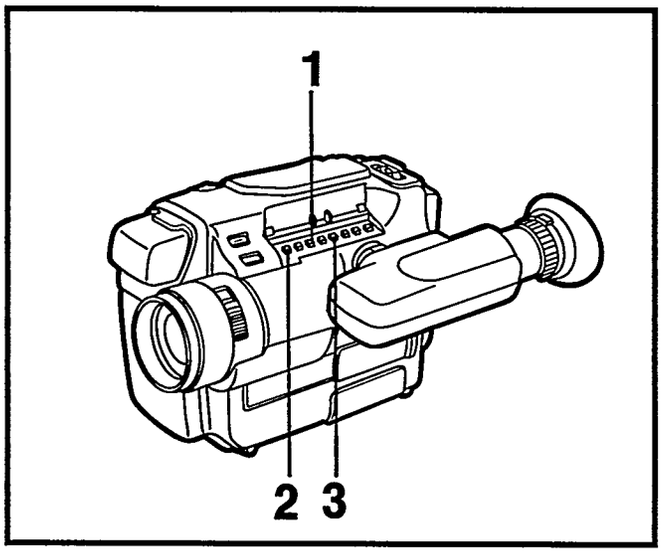
■ **How to adjust the tracking**
If the picture is distorted by noise bars during playback, the tracking needs to be adjusted.



1 Press both the ◀ TRACKING and TRACKING ▶ buttons simultaneously.

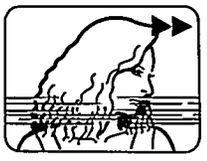
2 Eliminate any noise bars by adjusting the tracking with the ◀ TRACKING or TRACKING ▶ button.
- When playing back a tape which has been recorded on another Camcorder, it may not be possible to completely eliminate these noise bars.

Cue, review and still playback



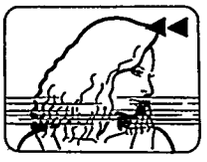
Cue (high-speed playback in the forward direction)

1 During playback, keep the ⏩ /FF button pressed.
- The Fast forward/cue mode ▶▶ indication appears in the viewfinder.



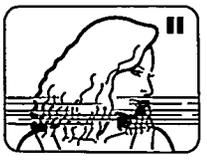
Review (high-speed playback in the reverse direction)

2 During playback, keep the REW/⏪ button pressed.
- The Rewind/review mode ◀◀ indication appears in the viewfinder.



Still Playback

3 During playback, press the PAUSE/STILL button.
- The Still mode ⏸ indication appears in the viewfinder.

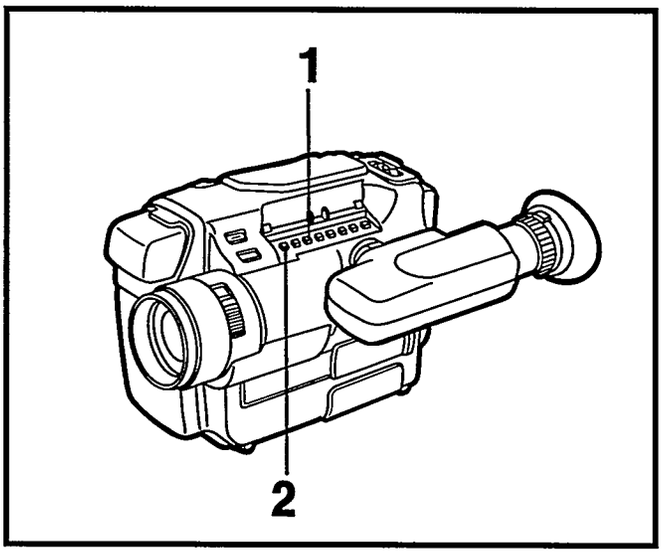


To resume normal playback

Press the PAUSE/STILL button again.
If the Camcorder is left in this mode for about 6 minutes, it will switch to the Stop mode, to protect the tape and video heads.

- The sound will be played back only during normal playback (if connected to a TV set).
- In the cue, review and still playback modes, horizontal noise bars appear in the picture.
  However, this is not an indication of a malfunction.
- In the cue, review and still playback modes, the picture may become black and white or distorted. This is not an indication of a malfunction.

Fast forward/rewind



With the Camcorder in the stop mode

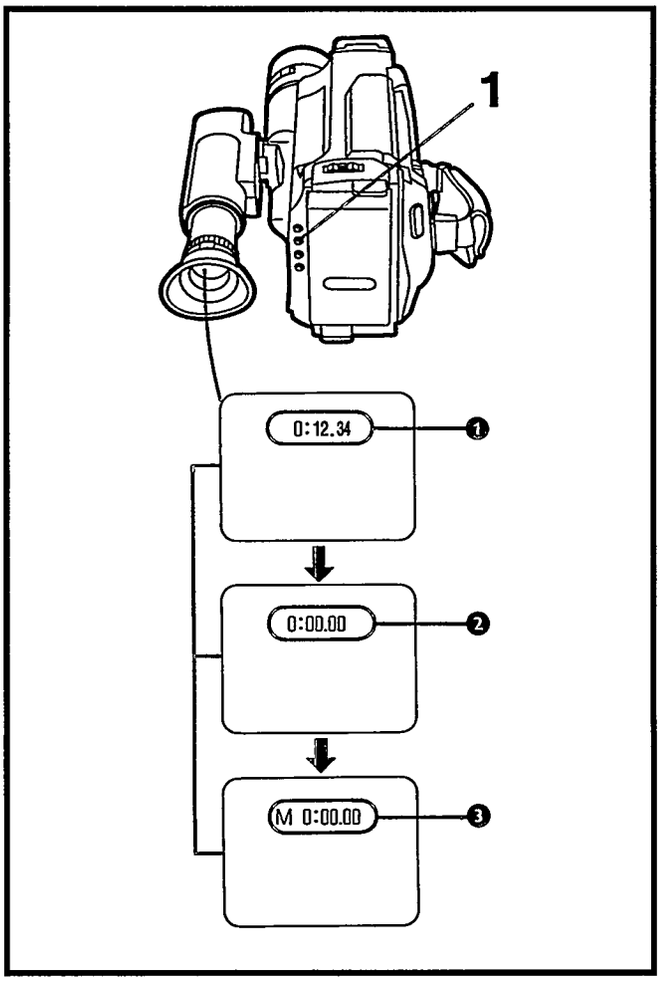
1 Press the ⏩ /FF button in the Stop mode to wind the tape forward at high speed.
- The tape will be rewound automatically when it reaches the end of the tape.

2 Press the REW/⏪ button in the stop mode to rewind the tape at high speed.
- The tape will stop automatically when it reaches the beginning of the tape.

Tape counter

The tape counter indication shows the elapsed tape time in hours, minutes and seconds.

■ **How to reset the tape counter to "0:00.00"**



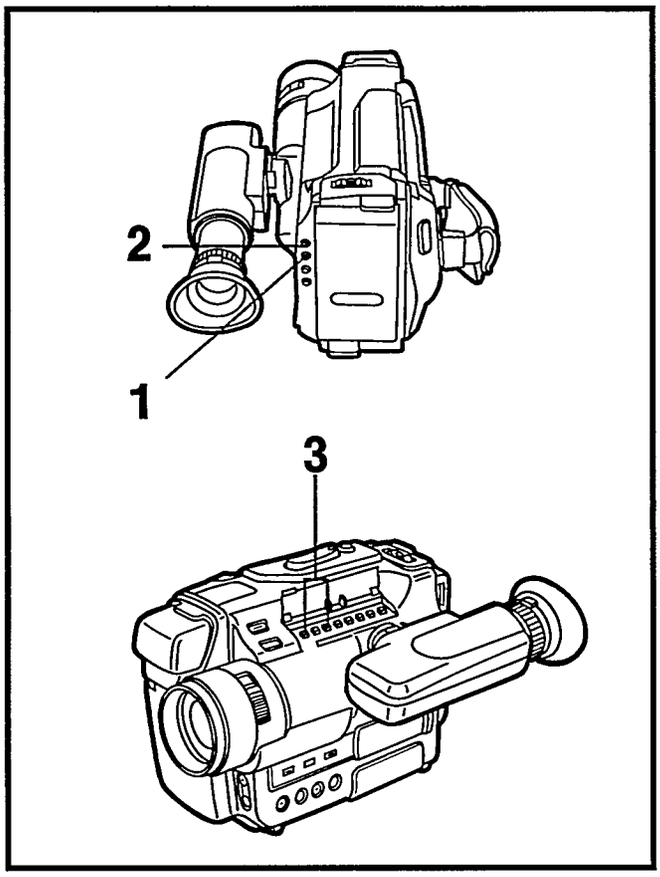
1 Press the RESET button.
The tape counter is reset to "0:00.00".

- The tape counter is automatically reset to "0:00.00" when the cassette is taken out and a new cassette is inserted.

Note:
When the tape is rewound further than the tape counter position "0:00.00", the minus indication "–" appears in front of the tape counter indication.

Counter memory function

■ **How to search for a memorized tape position after recording or playback**



1 Press the RESET button, to set the tape counter to 0:00.00, at the position that is to be memorized.

2 Press the OSD/MEMORY button.

- The "M" indication appears in the viewfinder next to the tape counter indication.
(OSD: means On-Screen Display)

3 Press either the REW/◀◀ or ▶▶ /FF button.

- The tape stops automatically at about the point where the tape counter reads "M0:00.00".

Note:
If the figures in the tape counter do not change during fast forward, rewind or any of the playback functions. This means that nothing is recorded on that tape portion.

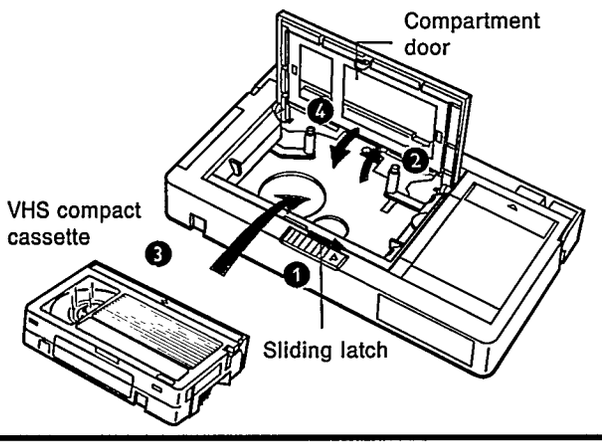
■ To cancel the counter memory function
Press the OSD/MEMORY button.

- The "M" indication in the viewfinder disappears.

Playback on a VCR using the supplied cassette adaptor (22AV5146)

The VHS compact video cassettes recorded with the Camcorder can be played back on a standard VHS VCR by using the optional cassette adaptor. (A compact video cassette installed in the cassette adapter is fully compatible with a standard VHS VCR for both recording and playback.)

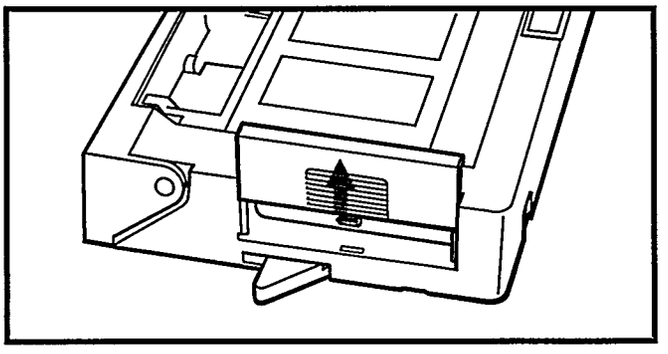
- 22AV5146 cassette adaptor
  The 22AV5146 performs tape loading and unloading automatically.



For more details refer to the instruction manual of the 22AV5146.

Note:
It may be necessary to adjust the tracking control on the video cassette recorder for optimum picture quality. (See the Operating instructions of your video cassette recorder.)

Inserting the battery into the cassette adaptor

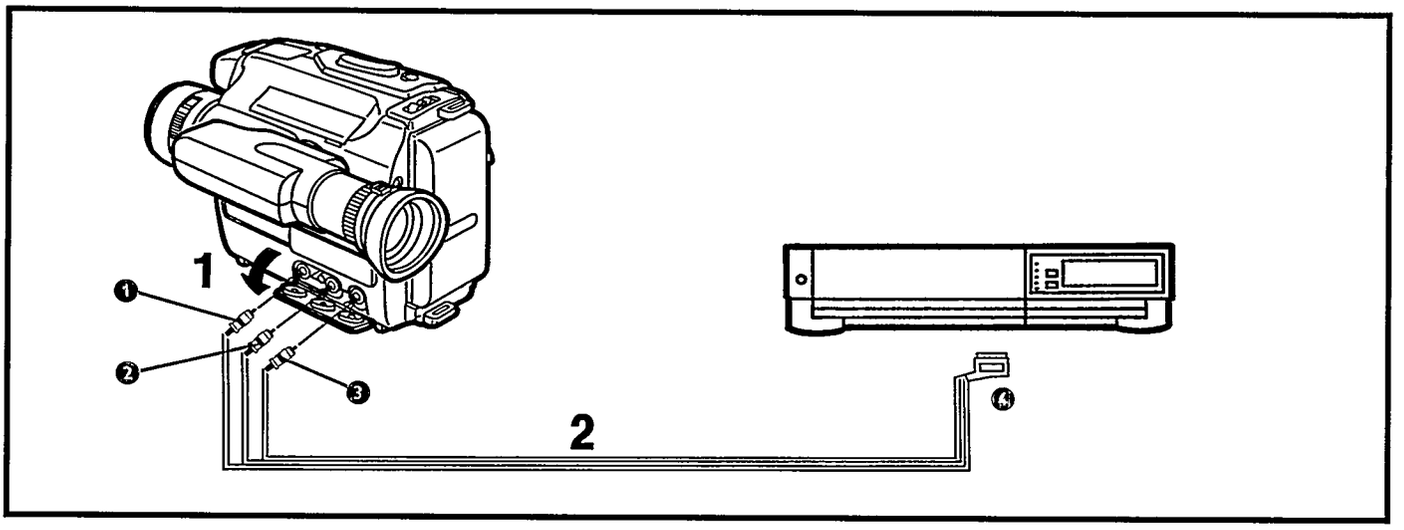


Remove the battery cover by sliding it up. Install one "R6" battery and reattach the cover.

Editing techniques

Tape dubbing (Dubbing to a VCR)

Connection using the supplied AV output cable SBC5510

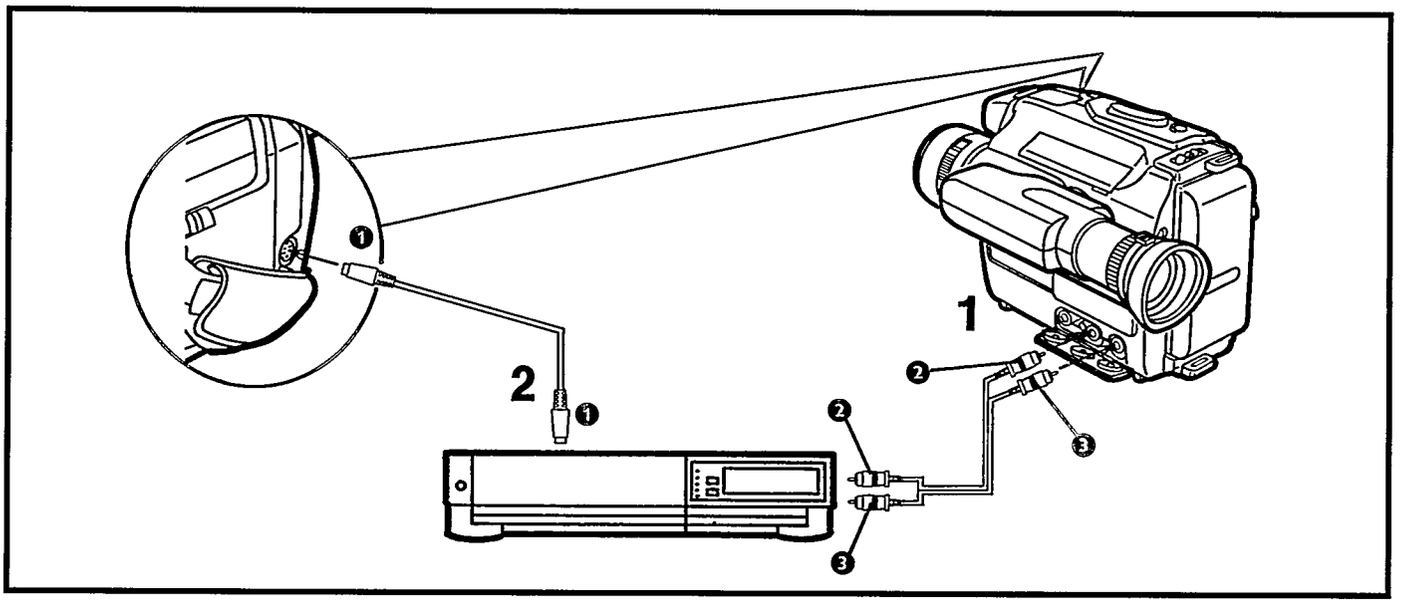


1 Remove the socket cover.

2 Connect the Camcorder to the VCR.

Camcorder		VCR
Video output socket ❶		
Audio output socket (L) ❷	———	❹ AV input socket
Audio output socket (R) ❸		

Connection using the supplied S-VIDEO cable SBC5500



1 Remove the socket cover.

2 Connect the Camcorder to the VCR.

Camcorder		VCR
S-VIDEO output socket ❶	———	❶ S-VIDEO input socket
Audio output socket (L) ❷	———	❷ Audio input socket (L)
Audio output socket (R) ❸	———	❸ Audio input socket (R)

Operations

Camcorder

1 Insert a recorded video cassette into the Camcorder.

2 Press the PLAY button. (And if necessary press the FF/CUE and the REW/REVIEW button to locate the scene from where the dubbing is to start.)

3 Press the PAUSE/STILL button at the position where dubbing is start.

6 Press the PAUSE/STILL button to start playback.

8 Locate on the Camcorder the beginning of the next scene to be dubbed, and press the PAUSE/STILL button at that position.

VCR

4 Insert a video cassette (with the safety tab intact) into the VCR. If your VCR is equipped with SP/LP, it would advisable to use the SP mode.

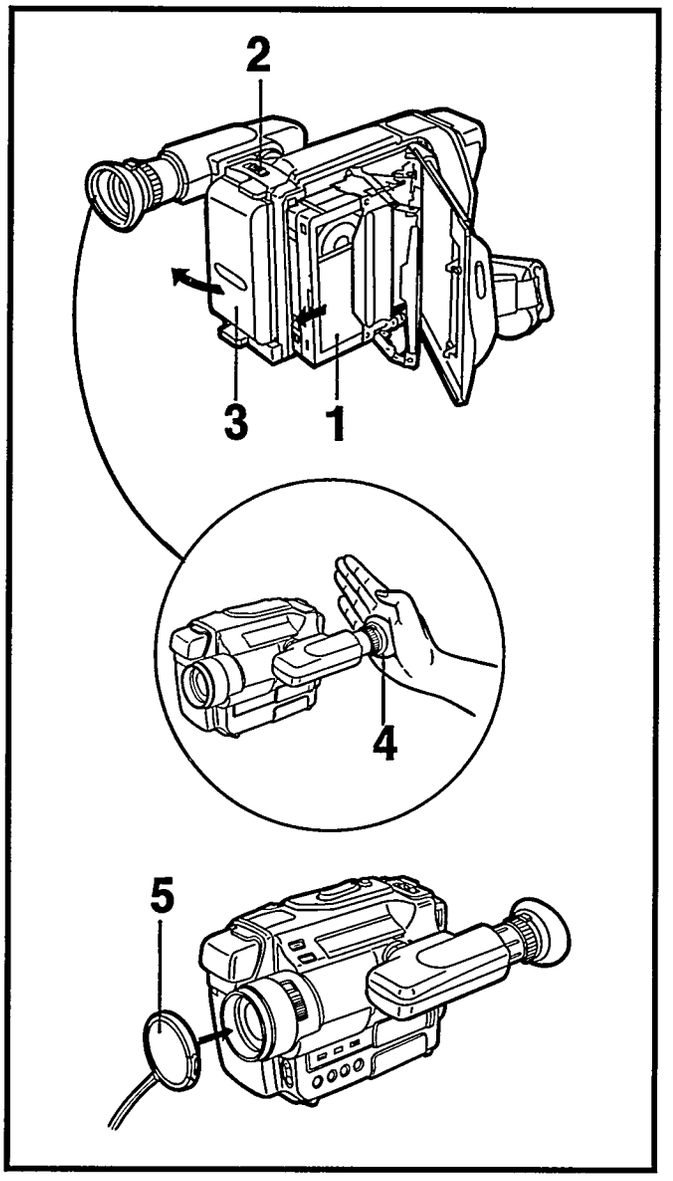
5 Press the Record button to start recording.

7 Press the Pause/Still button at the position where the recording is to end. The VCR is now in the recording pause mode.

9 Press the Pause/Still button again to resume recording.

- Repeat steps from 6 to 9 for each additional scene to be dubbed.

After use



1 Remove the cassette.

2 Press and slide the Operation switch to "OFF".

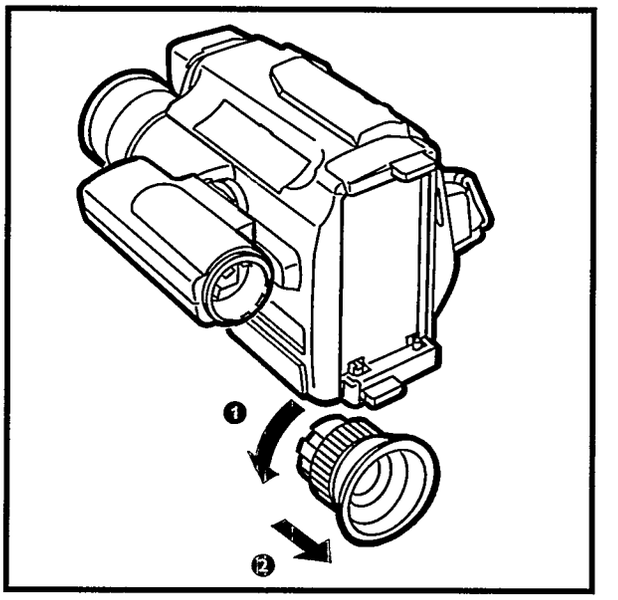
3 Remove the battery pack.

4 Retract the viewfinder.

5 Attach the lens cap to the lens.

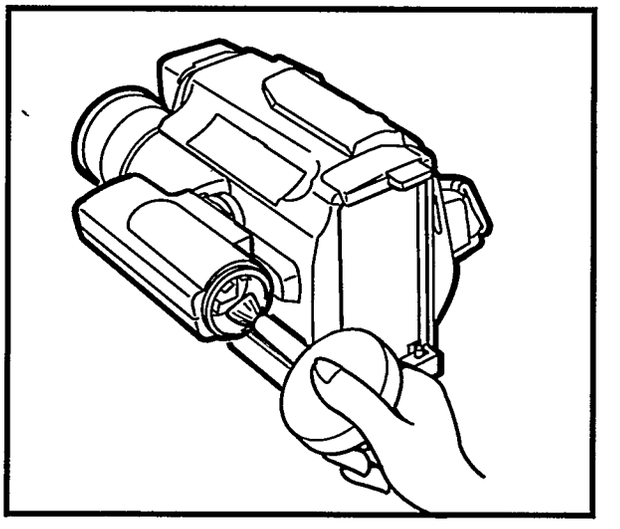
Cleaning the viewfinder

1



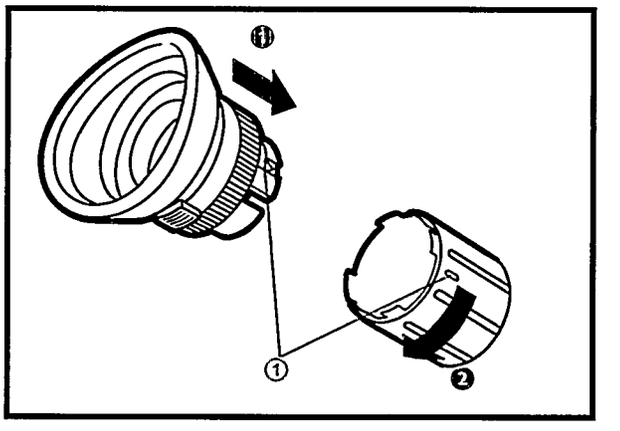
Take off the eyecup by turning it counterclockwise.

2



Remove dust with a blower brush.

3



Align the two marks ①, insert the eyecup and turn it clockwise.

Supplementary information

What is "colour temperature"?

Light is composed of various colour components in different proportions. A relationship exists between the temperature of a light source and the colour components of the emitted light; as the temperature rises, the colour of the light varies from red, orange, yellow, white to blue in that order. "Colour temperature" is a value that expresses differences in colour among light sources, measured in kelvin.
Bluish light has a higher colour temperature than reddish light.

What is "white balance"?

Making the colours look natural on TV is what white balance is all about. Because a camera is not as adaptable as the human eye, if a light source is reddish, white subjects in that light are recorded as reddish. White balance adjustment is performed to compensate for colour temperature variations of light so that whites are reproduced as white. Correct white balance makes all other colours correct. The Camcorder can perform automatic white balance adjustment in the full-auto mode. However, if illumination is insufficient, white balance adjustment cannot be performed. To obtain correct colours, therefore, sufficient illuminations essential.

What is "illuminance"?

"Illuminance" is the intensity or brightness of reflected light, expressed in lux. The Camcorder is designed to provide best pictures under the conditions of a 700-lux illuminance, although shooting is possible all the way down to 3 lux. To obtain good pictures in very bright light, the use of and ND (neutral density) filter is recommended. (See the chart on this page.)

How to get good colour pictures

The simplest way is to provide sufficient lighting (close to the camera's reference illuminance) and accurately adjust the camera to the colour temperature of that lighting. If light sources of different colour temperatures are used together, accurate white balance adjustment is very difficult. For example, if natural light is mixed with artificial light; which is likely to occur next to window, correct colours of the subject are difficult to obtain. It is recommended in such cases that curtains in the room be closed to shut out light from outside. Also, when artificial lighting devices are used, they should all have the same colour temperauter. For example, it is recommended that incandescent or halogen lamps not be used together with fluorescent lighting.

Colour temperatures of various artificial lighting

Type of illumination		Colour temperature
Tungsten lamp for home use		2,800 K
Tungsten lamp for photographic use		3,200 K
Quartz-halogen lamp		
Blue lamp for photographic use		5,000 K
Fluorescent lamp	Warm white	3,500 K
	White	4,500 K
	Daylight type	6,500 K

Illuminance chart

- The values on this chart are approximated to give you a rough reference.

	Unit: Lux	
ND filter desired	100,000 –	• Clear sky, mid-day, under sunlight (100,000)
Range for practical use		• Clear sky (10:00 a.m.) under sunlight (65,000) • Clear sky (3:00 p.m.) under sun light (35,000) • Cloudy sky (mid-day) under sunlight (32,000) • Cloudy sky (10:00 a.m.) under sunlight (25,000)
	10,000 –	
		• By the window during the afternoon (3,500)
	2,000 –	• Cloudy sky (one hour after sunrise) (2,000)
	1,000 –	• Clear sky (one hour before sunset) (1,000)
	600 –	• Counters at department stores (500 – 700)
Lighting desired	500 –	• Bowling center (500)
		• Office under fluorescent light (400 – 500) • Library (400 – 500)
		• Direct light of a flashlight at 1m distance (250)
	100 –	• Streetlights at night (150 – 200)
	80 –	
	Minimum lighting for an object	
	15 –	• Cigarette lighter (at a distance of 30 cm)
	10 –	• Candlelight (at a distance of 20 cm) (10 – 15)

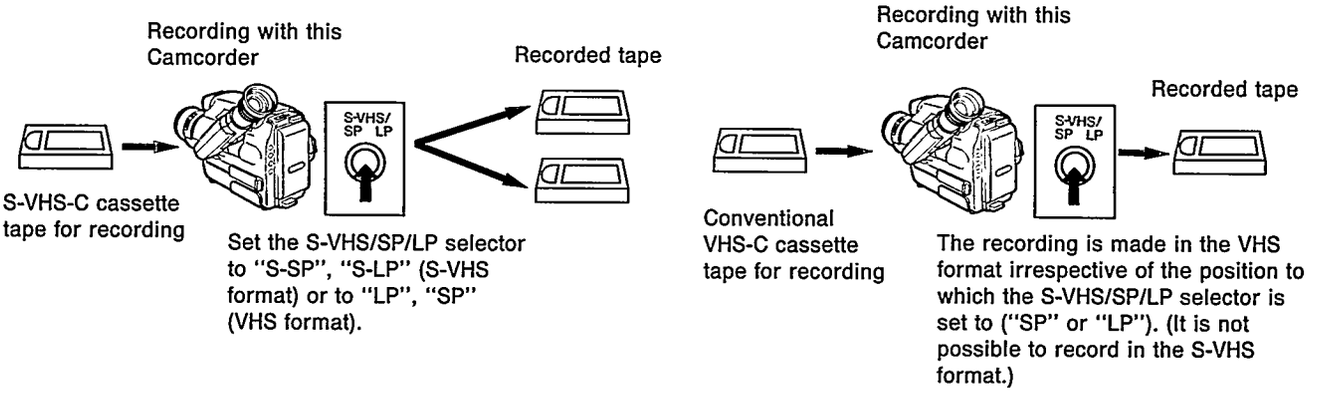
About the S-VHS Format

S-VHS C 625

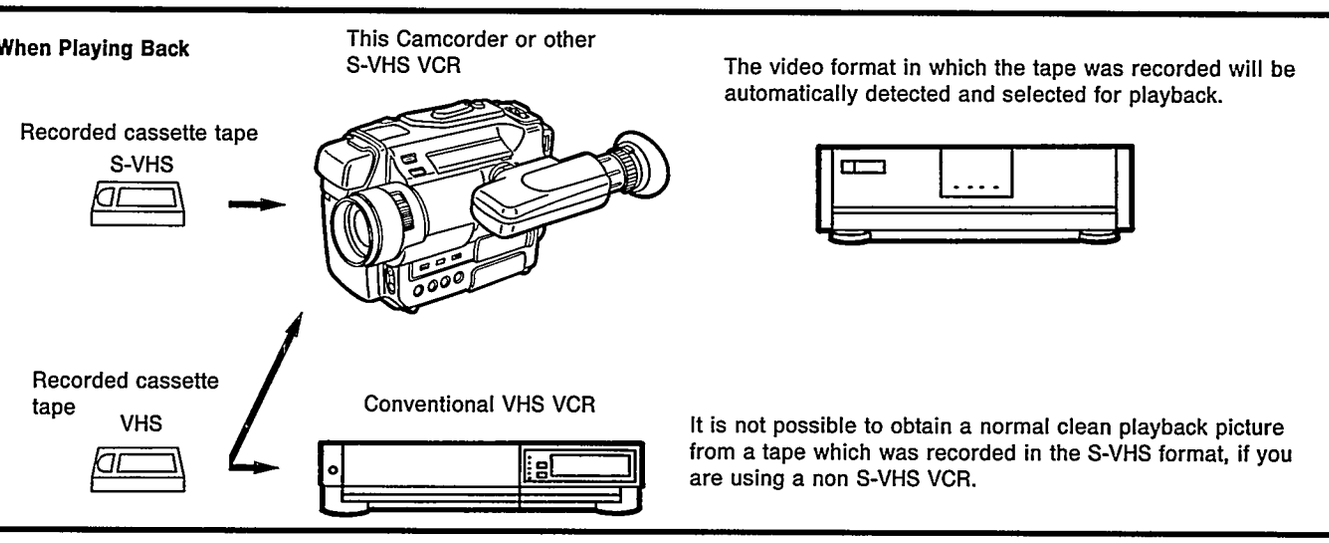
The S-VHS video format is the new video system that fulfills the exceedingly high demands and expectations of today's video-information age. It is newly developed and based on the VHS video format established throughout the world for home use and employs a wealth of the latest technology to provide higher resolution and picture quality. The newly developed high-performance S-VHS-C video cassette tapes enable the S-VHS format to realize truly epoch-making improvements in overall picture quality and clarity.
This S-VHS-C Camcorder allows high picture quality recording and playback by using video cassettes carrying the S-VHS-C mark, as well as conventional VHS recording and playback on video cassettes bearing the VHS-C mark.

Compatibility of VCRs and tapes

When Recording


Recording with this Camcorder
Recorded tape
S-VHS/ SP LP
S-VHS-C cassette tape for recording
Set the S-VHS/SP/LP selector to "S-SP", "S-LP" (S-VHS format) or to "LP", "SP" (VHS format).
Recording with this Camcorder
Recorded tape
S-VHS/ SP LP
Conventional VHS-C cassette tape for recording
The recording is made in the VHS format irrespective of the position to which the S-VHS/SP/LP selector is set to ("SP" or "LP"). (It is not possible to record in the S-VHS format.)

When Playing Back


This Camcorder or other S-VHS VCR
The video format in which the tape was recorded will be automatically detected and selected for playback.
Recorded cassette tape
S-VHS
Recorded cassette tape
VHS
Conventional VHS VCR
It is not possible to obtain a normal clean playback picture from a tape which was recorded in the S-VHS format, if you are using a non S-VHS VCR.

- If the setting of this selector is changed during shooting, some picture distortion will occur during playback.

VITC signals

This Camcorder is designed for recording VITC (Vertical Interval Time Code) signals automatically from a built in VITC generator. It can count up continuously from 0 to a maximum of 24 hours. Using the VITC Editing Controller System (IHP6803/6804, optional), cassette tapes that have been recorded with VITC signals can be edited conveniently and with frame-by-frame precision.

Notes:

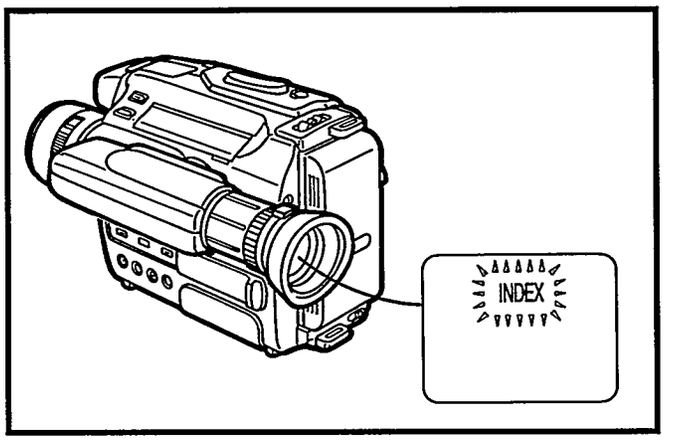
- *For actual editing, refer to the Operating instructions of the VITC Editing Controller System.*
- *A button type battery ensures that the last time code value before the recording was interrupted is always retained in memory. Thus when camera recording is resumed later, the time code sequence continues from the point where it was halted, even if the Camcorder was switched off.*

Cautions for making camera recordings with the VITC time code

To ensure that the desired scenes can be found during editing, the time code must be recorded continuously without gaps.

1. Provide a leader for each video cassette. Leave the lens cover on the camera lens and start recording. Let the Camcorder run like this for at least 20 seconds.
2. Each time you start the Camcorder, small jumps may appear in the timecode.These jumps would make editing of the first frames of a scene difficult. Thus get into the habit of always starting the Camcorder 5 seconds before the actions you wish to record actually start.
3. Do not wind the tape in the video cassette forwards or backwards after taking a shot. The successive shots must be recorded in a continuous sequence.
4. Do not use the Camera Search or Rec review function.
5. Never make new recordings over parts of a recorded original cassette.

Index signal (VISS)



■ How to use the index signals
The index signals make it possible to use the VHS Index search or the Intro scan functions when playing back the tape on a VCR equipped with these functions.

An index signal is recorded automatically in the following cases:

- When shooting is started for the first time after attaching the battery pack.
- When shooting is restarted after the cassette is exchanged or after playing back the tape by pressing the PLAY button.

In both of these cases, the "INDEX" indication in the viewfinder flashes for a few seconds.

- For correct functioning of the VHS Index search and Intro scan functions on the VCR, the index signals should be spaced at least 2 minutes in the SP mode and 5 minutes in the LP mode.

In case of difficulty

What may initially appear to be trouble is not always a real problem. Make sure first.

Symptoms	Cause	Solutions
Power		
No power.	Power source not connected correctly.	Check battery, AC adaptor or car battery cord are correct.
No power using AC adaptor.	Battery pack on the AC adaptor for charging.	Remove the battery.
Camcorder turns off.	Battery is not fully charged or run out.	Recharge the battery or use fully charged one.
	Dew inside the Camcorder.	Wait until dew indication disappears.
	Camcorder switches off automatically if recording is stopped for more than 6 minutes.	Set the Operation switch to "OFF" and then to "CAMERA" again.
Recording		
No picture in the viewfinder.	Operation switch is set to "OFF" position.	Set the Operation switch to "CAMERA".
	Lens cap is attached.	Remove the lens cap.
Indications in the viewfinder are not clear.	The viewfinder is not extended.	Extend the viewfinder.
	Dioptric is not adjusted.	Adjust the dioptric adjustment ring.
	Lens is dirty.	Clean the lens.
Recording will not operate.	The tab of the inserted cassette is removed.	Cover the hole with adhesive tape.
	No cassette is inserted.	Load a cassette with intact safety tab.
	Tape is completely wound.	Rewind or use new tape.
Date/time cannot be recorded.	Date and time are not set.	Set the date and time.
Date/time are not displayed in the viewfinder.	DATE/TIME button was not pressed.	Press the DATE/TIME button.
	Back up battery is exhausted.	Replace the back up battery with a new one (CR2032).
Playback		
No playback picture.	Operation switch is not in "VCR" position.	Set the Operation switch to "VCR" position.
	Cassette is not loaded.	Load a cassette tape.
No playback picture or sound on the TV.	Connection to TV is incorrect.	Check the connection to TV.
	TV is not set to video channel.	Set TV to video channel.
Playback picture is not clear or distorted.	Tracking needs adjusting.	Adjust with TRACKING buttons.
	Tape is old.	Do not use tape for further recording.
	Video head is dirty.	Use head cleaner tape to clean.

The Camcorder is a microcomputer-controlled device. External noise and interference might prevent it from functioning properly. In such cases, first disconnect its power supply unit (battery pack, AC power adaptor, etc.); and then reconnect it and proceed as usual from the beginning.

General note

If the recording or playback quality decreases, it might be that the video heads are dirty.
Please consult your dealer for cleaning the heads.

Specifications

Power source	: DC 6.0 V
Power consumption	: 6.9 W (Battery operation, recording mode)
Video recording system	: Rotary four heads, helical scanning system
Tape speed	
SP	: 23.39 mm/sec
LP	: 11.7 mm/sec
Tape format	: S-VHS-C/VHS-C
Recording/playback time	
SP	: 45 min. with EC45 cassette tape
LP	: 90 min. with EC45 cassette tape

VIDEO

Television system	: CCIR 625 lines, 50 fields PAL colour signal
Modulation system	
Luminance	: FM azimuth recording
Colour signal	: Converted subcarrier phase shift recording
Output level	
Video out (RCA socket)	: 1.0 Vp-p/75 ohms unbalanced
S-VIDEO out	: 1.0 Vp-p/75 ohms unbalanced
Video horizontal resolution colour	
S-VHS	: More than 400 lines (S-video out)
VHS	: More than 250 lines
Signal to noise ratio	: More than 43 dB (SP)

AUDIO

MIC Input level	: –70 dB/4.7 kohms or more unbalanced
Output level	: –8 dB/600 ohms unbalanced
Audio track	
Hi-Fi	: 2 channels (Stereo)
Normal	: 1 track (Mono)
Frequency response	
Hi-Fi (SP)	: 50 to 20,000 Hz
Normal (SP)	: 80 to 8,000 Hz
Signal to noise ratio	
Hi-Fi (SP)	: More than 47 dB
Normal (SP)	: More than 43 dB

Image sensor	: 1/3-inch CCD image sensor
Lens	: 8:1 Power zoom lens with digital AI auto focus Focal length 6 — 48 mm F1.4 Auto iris Filter diameter 37 mm
Viewfinder	: 2/3-inch electronic viewfinder
Standard illumination	: 1,400 lux
Minimum required illumination	: 3 lux (Low light mode) 1 lux (Gain up mode)
Operating temperature	: 0° to 40° C
Operating humidity	: 20 to 80%
Weight	: 780 g (Without battery pack)
Dimensions	: 156 (W) x 118 (H) x 204 (D) mm

AC adaptor/battery charger SBC5420/5419

Power source	: AC 100 — 240 V, 50/60 Hz (Automatic voltage adjustment)
Power consumption	: 25 W
DC output	: DC 6 V, 11.8 W (Camcorder) DC 6 V, 1.3 A (battery pack charging)
Weight	: Approx. 0.39 kg
Dimensions	: 70 (W) x 58 (H) x 178 (D) mm

- **Weight and dimensions shown are approximate.**
- **Specifications are subject to change without notice.**

GB	IDENTITY CARD	This card, together with the terms of guarantee (to be provided by your dealer), forms the full certificate of guarantee for this appliance
D	GERATE-KENNKARTE	Diese Karte ist, zusammen mit den Garantiebestimmungen, die Ihr Handler Ihnen aushändigt, Ihr Garantieschein für dieses Gerät.
F	CARTE D'INDENTIFICATION	Associée aux conditions de garantie (qui vous sont remises par le revendeur), cette carte constitue le certificat de garantie de cet appareil.
NL	INDENTIFICATIEKAART	Deze kaart vormt, samen met de garantievoorwaarden (welke door uw dealer verstrekt worden), het garantiebewijs voor dit apparaat.
I	CARTE D'IDENTIFICAZIONE	Questa cartolina rappresenta insieme alle condizioni di garanzia (da consegnare dal vostro rivenditore) il documento di garanzia per questo apparecchio.
E	TARJETA DE INDENTIFICACIÓN	La garantía de este aparato se compone de esta tarjeta y de las condiciones de garantía que le entregará su concesionario
P	CARTÃO DE INDENTIFICACÃN	Este cartão, em conjunto com as condições de garantia em vigor (explicadas pelo seu vendedor) constituem o certificado de garantia do seu aparelho
GR	ΔΕΛΤΙΟ ΤΑΥΤΟΤΗΤΑΣ	Η καρτέλλα αυτή μαζί με τους όρους εγγυήσεως (που θα προμηθευθείτε από το κατάστημα που αγοράσατε την συσκευή), αποτελούν το πλήρες πιστοποιητικό εγγυήσεως της συσκευής σας.

PHILIPS

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